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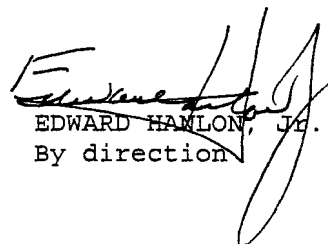
From: Commandant of the Marine Corps  
To: Distribution List

Subj: AVIATION TRAINING AND READINESS (T&R) MANUAL, LOW ALTITUDE AIR DEFENSE  
(LAAD) (SHORT TITLE: T&R MANUAL, LAAD)

Ref: (a) MCO P3500.14G

Encl: (1) LOCATOR SHEET

1. Purpose. To publish policies, procedures and standards regarding the training of LAAD Officers, Section Leaders, and Gunners per reference (a).
2. Cancellation. T&R Manual, MCO P3500.19B, Volume 5, Chapter 13-15.
3. Background. Reference (a) restructures the T&R manual organization from nine volumes to 25 individual Marine Corps orders. This order prescribes a unique template to provide the aviation commander with standardized programs of instruction. As such, this order deviates from the Five Paragraph Order Format directed by MCO 5215.1H.
4. Recommendations. Recommended changes to this order are invited, and will be submitted via the syllabus sponsor and the appropriate chain of command to: Commanding General, Training and Education Command (C 4610), Marine Corps Combat Development Command, 3300 Russell Road, Quantico, VA 22134-5001.
5. Reserve Applicability. This manual is applicable to the Marine Corps Reserve.
6. Certification. Reviewed and approved this date.

  
EDWARD HAWLON, Jr.  
By direction

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ENCLOSURE (1)

T&R MANUAL, LAAD

RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Entered	Signature of Person Incorporated Change



T&R MANUAL, LAAD

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SERGEANT/OPERATIONS CHIEF (MOS 7212)
- 3            LOW ALTITUDE AIR DEFENSE (LAAD) GUNNER (AVENGER/MANPAD)  
(MOS 7212)

# T&R MANUAL, LAAD

## CHAPTER 1

### LOW ALTITUDE AIR DEFENSE (LAAD) OFFICER (MOS 7204)

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CHAPTER 1

LOW ALTITUDE AIR DEFENSE (LAAD) OFFICER (MOS 7204)

100. INTRODUCTION

1. The purpose of the Marine Aviation Training and Readiness (T&R) program is to provide the commander with standardized programs of instruction for all aviation personnel. The goal is to develop unit warfighting capabilities, not to measure the proficiency of individuals. Syllabi are based on specific performance standards designed to ensure proficiency in core competencies. An effective T&R program is the first step in providing the Marine Air Ground Task Force (MAGTF) Commander with an Aviation Combat Element (ACE) capable of accomplishing any and all of its stated missions. The T&R program provides the fundamental tools for commanders to build and maintain unit combat readiness. Using these tools, unit training managers can construct and execute an effective training plan which supports the unit's mission essential tasks.

2. Unit training management is the application of the Marine Corps Training Principles and the Systems Approach to Training to satisfy the training requirements of commanders at all levels in order to accomplish their wartime mission. Guidance concerning unit training management and the process for establishing effective unit training management programs are contained in MCRP 3-0A, *Unit Training Management Guide*, and form the basis for the development of this T&R Manual. Familiarity with MCRP 3-0A will enhance understanding of the Systems Approach to Training used in T&R development and Marine Corps Unit Training Management principles.

3. To maintain congruity in aviation and ground T&R programs, CG TECOM (C4610) is coordinating an update to the aviation unit evaluation mechanism. Efforts are underway to incorporate Collective Training Standards (CTS) into aviation T&R manuals. The goal of this effort is to replace MCCRES Mission Performance Standards (MPS) with T&R CTS and utilize the T&R as the unit evaluation mechanism. Like MPS, CTS are criteria that specify mission and functional area unit proficiency standards for combat, combat support, and combat service support units.

4. The effort to replace MCCRES MPS with T&R manual CTS is in the development phase. The concept is to create separate unit chapters in all aviation T&R manuals which contain unit CTS in the form of unit events. CTS will be derived and implemented into T&R manuals using existing unit MCCRES MPS as a baseline. Unit evaluation will be standardized in T&R manuals, not in a separate document. CG TECOM (C4610) plans to cancel unit MCCRES orders as respective unit CTS chapters are approved. Until unit T&R CTS are formally approved, MCCRES shall be utilized as the aviation unit evaluation standard.

101. CORE COMPETENCIES/SKILLS

1. Core competency serves as the foundation of the T&R program. Core competencies are those core capabilities and skills which support the Mission Essential Tasks List (METL) derived from MCWP 3-2, *Aviation Operations*, and T/O mission statements, which are realistically expected to be assigned in combat. Core competencies for the LAAD Bn are listed in paragraph 101.3.

2. Mission. The mission of the LAAD Bn is to provide close-in, low altitude surface-to-air weapons fires in defense of the MAGTF. LAAD Bns defend forward combat areas, maneuver forces, vital areas, installations, and/or units engaged in special or independent operations.



### 3. Mission Essential Task List

- a. Command and control the battalion.
- b. Conduct direct support missions.
- c. Conduct general support missions.
- d. Conduct combat operations in a NBC environment.
- e. Plan and coordinate requirements for Command, Control, Communications, Computers, Information, and Intelligence (C4I2) integration within the MAGTF.
- f. Conduct amphibious/expeditionary operations to include the capability to phase control ashore.
- g. Provide 24 hour air defense for special tactical situations and task organizations.

### 4. Battalion Core Capability

a. A core capable LAAD Bn is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 90% equipment/supply readiness and reporting status and 70% T/O on hand in all MOSSs. If less than 70% T/O, core capability will be degraded by a like percent. The extent to which a core capable battalion is able to surge beyond its core capability is situational dependent.

b. A section is the smallest employable LAAD element. A core capable battalion is able to employ 11 sections of Combat Capable Avenger/MANPAD teams. A LAAD section is comprised of 5 Stinger teams (any combination of Avenger/MANPAD - 2 Marines per team), 2 communicators, and 1 section leader. The typical Avenger section deploys with 5 Avengers. Each Avenger weapon system is equipped with a Forward Looking Infrared (FLIR), Laser Range Finder (LRF), 8 ready Stinger missiles, and an M3P .50 cal machine gun with 285 rounds. This provides 40 Stinger missiles and 1425 .50 cal rounds per Avenger section. The typical MANPAD section deploys with 30 Stinger missiles and 5 thermal imaging sights (AN/PAS-18), providing limited night capability.

c. A core capable section can provide air defense for designated air defense priorities relative to the scope and size of each site (FARP, BDZ and MAGTF maneuver elements). Dependent on the supported MAGTF, Joint, or Coalition operation, appropriate command and control nodes will be employed.

## 102. SUMMARY/INDEX OF LIVE/SIMULATED EVENTS

1. Combat Capable. Table 1-1 contains a listing of the Combat Capable training events and associated page numbers.

Table 1-1.--Combat Capable Training List.

EVENT	GOAL	PAGE
FAM-140	Demonstrate knowledge of the Low Altitude Air Defense (LAAD) Battalion	1-19
SYS-140	Visually identify aircraft.	1-20
SYS-141	Perform preventive maintenance of the HMMWV.	1-20
SYS-142	Convert a Stinger missile round to a weapon round.	1-21

EVENT	GOAL	PAGE
SYS-143	List and describe the capabilities of the Stinger missile system.	1-21
SYS-144	Perform the 13 critical checks.	1-22
SYS-145	Perform hangfire, misfire, and dud emergency procedures for the Stinger missile.	1-22
SYS-146	State the emergency destruction procedures for the Stinger missile and all ancillary equipment.	1-23
SYS-147	Operate a secure SINCGARS in single channel (SC).	1-23
SYS-148	State the handling of CMS software (receive, safeguard, use, and proper destruction procedures).	1-24
SYS-149	Operate the Intercommunication set AN/VIC-1.	1-24
SYS-150	Operate the current Global Positioning System (GPS).	1-25
SYS-151	Operate the Remote Terminal Unit (RTU).	1-25
SYS-152	Perform gunner duties during missile load and unload (Avenger).	1-26
SYS-153	Mount and remove the M3P machine gun from the Avenger.	1-27
SYS-154	Perform boresight checks and adjustments on the M3P machine gun and optical sight.	1-28
SYS-155	Load and unload the M3P machine gun.	1-28
SYS-156	Perform gunner duties during emplacement of the Avenger.	1-29
SYS-157	Perform emergency procedures for hangfire and misfire (Avenger).	1-30
SYS-158	Perform immediate action for a malfunction of the M3P machine gun.	1-30
SYS-159	Troubleshoot the Avenger and M3P machine gun.	1-31
SYS-160	Perform operator troubleshooting on the SINCGARS.	1-31
SYS-161	Perform operator maintenance on the M3P machine gun.	1-32
SYS-162	Perform the preventive maintenance checks and service (PMCS) on the Avenger.	1-32
OPS-140	Establish a team position in the MANPADS and Avenger configurations.	1-33
OPS-141	Plan for the employment of a LAAD platoon.	1-34
SAW-140	Engage a hostile target with the Stinger missile MANPAD.	1-35
SAW-141	Engage a hostile fixed/rotary wing target with the Avenger.	1-36
SAW-142	Engage an aerial and/or ground target with the M3P machine gun.	1-36
SAW-143	Engage an aerial target with a Stinger missile (MANPADS or Avenger).	1-37

2. Combat Ready Stage. Table 1-2 contains a listing of the Combat Readiness training events and associated page numbers.

Table 1-2.--Combat Readiness Training List.

EVENT	GOAL	PAGE
SYS-240	Handle CMS software (receive, safeguard, use, and proper destruction procedures).	1-38
SYS-241	Operate organic communication security keying devices.	1-38
SYS-242	Program the IFF.	1-39
SYS-243	Operate the KL-43.	1-39
SYS-244	Establish and maintain HF Secured Communications.	1-40
SYS-245	Operate the AN/MRC-138.	1-40
SYS-246	Install and operate the AN/UPS-3 Tactical Defense Alert Radar (TDAR).	1-40
SYS-247	State the emergency destruction procedures for all ancillary command post equipment.	1-41
OPS-250	Conduct a detailed Intelligence Preparation of the Battlefield (IPB).	1-41
OPS-251	Establish a LAAD platoon/battery command post.	1-42
OPS-252	Design and establish a Ground Based Data Link(GBDL).	1-42
OPS-253	Use proper communication procedures.	1-43
OPS-254	Conduct day and night navigation.	1-43
OPS-255	Plan for the employment of a LAAD unit.	1-44
OPS-256	Plan and implement a unit level training program.	1-44
OPS-257	Plan and implement a unit level operational risk management program.	1-45
OPS-258	Plan for small arms in an air defense role.	1-45
QUAL-280	Qualify as a Combat Ready LAAD Officer.	1-46

3. Combat Qualification Stage. Table 1-3 contains a listing of the Combat Qualification training events and associated page numbers.

Table 1-3.--Combat Qualification Training List.

EVENT	GOAL	PAGE
OPS-350	Receive and issue an operations order.	1-47
OPS-351	Employ a LAAD unit.	1-47
SAW-360	Conduct multiple target engagements with the Avenger and MANPAD.	1-48
SAW-361	Engage aircraft with the M3P Machine Gun	1-49
QUAL-380	Qualify as a Combat Qualified LAAD Officer.	1-50
QUAL-381	Qualify as a Combat Qualified LAAD Platoon or Battery.	1-50

4. Full Combat Qualification Stage. Table 1-4 contains a listing of the Full Combat Qualification training events and associated page numbers.

Table 1-4.--Full Combat Qualification Training List.

EVENT	GOAL	PAGE
SYS-440	Use aviation mission planning tool products.	1-51
OPS-450	Plan for LAAD employment in a Joint/Combined environment.	1-52
OPS-451	Plan for LAAD operations.	1-52
QUAL-577	Attain designation as a Weapons and Tactics Instructor (WTI).	1-53

5. Operator Core Skills. Core skills are depicted in the following matrix (table 1-5) and directly support the METL for each Unit. Core skills shall be a determining factor in developing T&R training requirements. Core Plus skills and training requirements must receive appropriate prioritization and emphasis based on the training need, and the likelihood of those types of missions being assigned during operations.

Table 1-5.-- Core and Core Plus Skills Matrix.

CORE SKILLS						CORE PLUS SKILLS		
METL	FAM	SYS	OPS	SAW	QUAL	SYS	OPS	QUAL
A	140	240	250		280	440	450 451	577
		243	252		350			
		244	253		351			
		245	255					
		246	256					
		247	257					
			350					
B		242	250	360	280		450	577
		246	254	361	350			
			255		351			
			257					
			258					
			350					
			351					
C		242	250	360	280		450	577
		246	254	361	350			
			255		351			
			257					
			258					
			350					
			351					
D			250	360	280		450	577
			255	361	350			
			257		351			
			351					
E			252		280		450	577
			253		350			
			257		351			
			351					
F		246	250	360	280		450	577
			254	361	350			
			255		351			
			257					
			350					
			351					
G		242	250	360	280		450 451	577
		246	254	361	350			
			255		351			
			257					
			350					
			351					

### 103. UNIT TRAINING POLICIES

1. The unit's training program emphasizes qualifications and the overall combat readiness of the unit. Individual training serves as the building block for overall unit readiness. However, unit training will never be compromised for the training of a select, few individuals. Battalion and battery commanding officers will ensure that this training philosophy is implemented. Unit training must predominate, and battalions must tailor their training plans to ensure unit combat readiness.

2. The training of Marines to perform as an integral aviation unit in combat lies at the heart of the T&R program. Unit readiness and individual readiness are directly related. Individual training and the mastery of individual core skills serve as the building blocks for unit combat readiness. A Marine's ability to perform those critical skills required in combat is essential.

3. The mission performance standards for Marine aviation units are published under MCCRES or appropriate Unit T&R. MCCRES or Unit T&R standards shall form the basis for standards defined within the respective individual T&R. Commanders shall ensure that all tactical training is conducted to a MCCRES/Unit T&R standard. MCCRES or Unit T&R is the unit training standard, and all syllabus events shall be tailored to meet those requirements. Commanders at all levels are responsible for effective aviation training. The conduct of training in a professional manner consistent with Marine Corps standards cannot be overemphasized.

4. Commanders must be cognizant of the numerous factors affecting unit training on a daily basis. Factors that all commanders must address include, but are not limited to:

a. Efficiency. Time and resources expended are measurements for training efficiency. Commanders must ensure that all training increases combat readiness. Unit personnel shall thoroughly plan and effectively execute training to maximize the return on their time and effort.

b. Individual Differences. Commanders must recognize the differences inherent in each individual and should mold flexible training programs to accommodate those differences.

c. Decentralization of Training. The lowest echelon possible shall be responsible for conducting training. Each senior level of command must monitor subordinate commands to ensure safe and efficient training requirements.

5. Commanders shall provide personnel the opportunities to attend formal and operational level courses of instruction as required by this Manual. Attendance at all formal courses must enhance the warfighting capabilities of the unit.

6. Risk Management. Operational Risk Management (ORM) is a process to aid commanders in accomplishing their missions while protecting the force. Commanders, leaders, maintainers, and planners will integrate risk assessment in the decision making process and implement hazard controls to eliminate risk or reduce it to an acceptable level.

7. MACCS Integrated System Training. All elements of the MACCS shall maintain the capability to effectively function as part of an integrated airspace command and control system. Large exercises may not always offer sufficient training opportunity for all team members, and in many cases do not offer sufficient latitude to refine capability upon arrival. The MACCS should conduct MACCS Integrated System Training Exercises (MISTEX) on a regular basis

to qualify units and personnel per their respective T&R syllabus. MISTEXs should focus on the establishment of necessary communications and datalinks between MACCS agencies, and incorporate sufficient simulation and Master Scenario Event List (MSEL) items to exercise and analyze system integration, team coordination, and critical information flow wherever possible. Tactical Digital Information Link capable agencies should conduct frequent "Link" training exercises to maintain proficiency.

8. Surface-to-Air Missile Training and .50 Caliber Training. Live firing is critical to establish a Marine's confidence in a weapon system. In today's world of reduced budgets, every effort must be made to make each training missile/round count. The challenge is not to simply place weapons on line and aimlessly send missiles/rounds down range. Each missile/round should be scored, recorded and analyzed to ensure that the maximum training benefit is being achieved by the Marine/team who fired it. Subject to the availability of missiles and targets, all 7212s assigned to an active battalion in the operating forces should fire at least one Stinger missile (FIM-92A/C/D) during a three year period. In addition, each 7212 will fire 285 rounds of .50 caliber ammunition from the M3P machine gun annually. Commanders shall ensure those members participating in live missile firing exercises have completed appropriate T&R prerequisites as outlined in the applicable syllabus. All missile and .50 caliber firings should be conducted under conditions which closely simulate actual conditions expected to be encountered in the tactical environment (within applicable safety and range constraints), and include the participation of other elements of the MACCS whenever possible.

#### 104. LAAD OFFICER TRAINING PROGRESSION PHILOSOPHY

1. Successful combat units train as they intend to fight and fight as they are trained. The key to successful training for the LAAD Bn lies in raising the quality of an individual's LAAD MOS training and experience. More importantly, however, is the goal of improving the training of the tactical units that make up the core combat elements of the battalion. Individual training is the source of a Marine's trust and confidence in the Corps. Small unit skills or collective skills are the foundation on which unit effectiveness is built.

2. The intent of this document is to develop the core warfighting capability of LAAD officers and the units they lead. All 7204 company grade officer MOS training will be in accordance with this document. The event refly requirements for those officers serving on the Battalion staff or in the Headquarters and Service Battery will be adjusted to compensate for the lack of training opportunities presented in the primary MOS. When the 7204 company grade officer is assigned to the Battalion staff or Headquarters and Service Battery, that officer will continue to maintain his current T&R qualifications until reassignment to a firing battery.

a. Events contained within the Combat Ready stage of training are individual tasks to be performed by all MOS 7204 officers in the LAAD Bn.

b. Events contained in the Combat Qualification stage of training are collective tasks and will be performed as part of platoon or battery level training evolutions. Upon successful completion, the platoon or battery Commander will be given Combat Readiness Percentage (CRP) credit individually, while the platoon or battery, as a combat entity, may be given CRP credit if the following conditions are met:

(1) For a SECT, 5 of 5 teams are on-hand and 3 of 5 teams are certified as Combat Qualified.

- (2) For a PLT, 9 of 15 T/O teams are on-hand.
- (3) For a BTRY, 27 of 45 T/O teams are on-hand.
- (4) For a PLT, 2 of 3 SECTs are certified as Combat Qualified.
- (5) For a BTRY, 2 of 3 PLTs are certified as Combat Qualified.

c. A break-up of 50% of the combat entity that has been certified as Combat Qualified requires a refile for that entity. However, individual Combat Qualification is not lost, nor is the individual CRP credit accumulated from 200-level T&R events that may have been chained to the completion of 300-level T&R events.

3. Officers will receive basic MOS qualification and designation upon graduation from the LAAD Officers course conducted by the Marine Corps Detachment, USAADASCH, Ft. Bliss, TX. Additional certifications as a Combat Qualified LAAD Platoon Commander or Battery Commander is contingent upon successful completion of the appropriate 300-level T&R tasks contained within the syllabus, and any of their prerequisites.

#### 105. TRAINING PROGRESSION MODEL FOR LAAD OFFICER

1. The Training Progression Model for the LAAD Officer is depicted in figure 1-1.
2. This model depicts the logical progression of qualifications within a unit. The base of each model contains those qualifications an individual reports to the unit with (accession qualifications) after completion of the MOS-qualifying school. The highest tier of the progression model will contain those qualifications held by only the most experienced personnel within a unit.
3. The first tier (Combat Capable) will in most cases be accomplished at the completion of initial MOS skills training. With successful completion of the Combat Capable tier, unit personnel move to the Combat Ready tier.
4. The second tier (Combat Ready) is designed to introduce required individual skills associated with equipment and responsibilities pertinent to a platoon commander/battery commander. This tier will ensure proficiency in individual competencies. It will take the individual who has completed his initial MOS skills training and make him proficient in core competencies. With successful completion of the Combat Ready tier, unit personnel move to the Combat Qualified tier.
5. The third tier (Combat Qualified) focuses on collective skills and will be that portion of the model that produces viable combat entities and combat leaders. The personnel that are being trained in the Combat Qualified tier are those Marines a commanding officer deems capable of directing the actions of subordinates during wartime scenarios.
6. The fourth and final tier (Full Combat Qualified) will contain special skills and qualifications. Full Combat Qualified tier personnel are the most experienced personnel within a unit. They are expected to display the maturity and tactical acumen commensurate with this status and assist the commanding officer with oversight of the unit training program.
7. The unit's training progression model provides training officers with a valuable tool to develop training plans. With a clear progression of qualifications delineated, and an emphasis on the qualification of Combat

Capable and Combat Ready personnel, training officers have the ability to produce viable training plans. Units will use the model as a point of departure to generate weekly, monthly, quarterly and annual training plans.

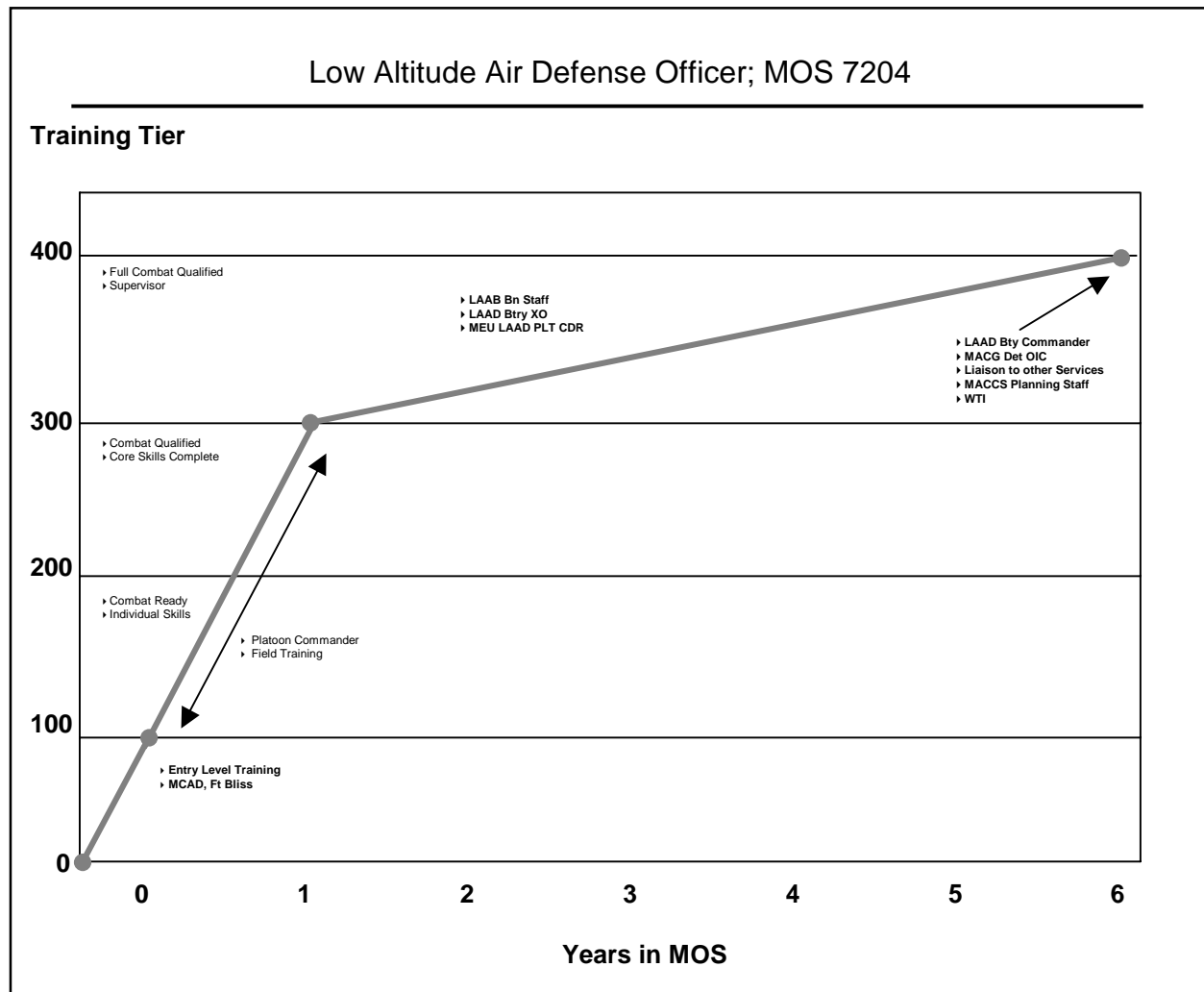


Figure 1-1.--LAAD Officer Training Progression Model.

## 106. PROGRAMS OF INSTRUCTION (POI) FOR LAAD OFFICER

### 1. Basic LAAD Officer

WEEKS	COURSE/PHASE	ACTIVITY
1-6	Combat Capable Training	USAADASCH
7-38	Combat Ready Training	LAAD Bn
39-52	Combat Qualification Training	LAAD Bn
53-WC	Full Combat Qualification Training	LAAD Bn

### 2. Transition LAAD Officer

WEEKS	COURSE/PHASE	ACTIVITY
1-6	Combat Capable Training	USAADASCH



<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
7-38	Combat Ready Training	LAAD Bn
39-52	Combat Qualification Training	LAAD Bn
53-WC	Full Combat Qualification Training	LAAD Bn

### 3. Refresher LAAD Officer

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
13-38	Combat Ready Training	LAAD Bn
39-64	Combat Qualification Training	LAAD Bn
65-WC	Full Combat Qualification Training	LAAD Bn

## 107. SPECIAL DESIGNATIONS

1. LAAD Platoon/Battery Commander Qualification. A LAAD Platoon/Battery Commander is qualified after having completed the required events of the Combat Qualification phase of the appropriate T&R syllabus and is certified by a LAAD WTI or the MAWTS-1 LAAD Instructor. He shall be designated by the unit commanding officer.

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
65-WC	Platoon Commander	LAAD Bn
156-WC	Battery Commander	LAAD Bn

## 110. GROUND/ACADEMIC TRAINING

1. Academic training shall be conducted for each phase/stage of the syllabus. Commanders are strongly encouraged to incorporate the lectures in table 1-6 into their training plans. Where indicated, standardized academic training materials exist and may be obtained from the activity listed as the sponsor.

Table 1-6.--Required T&R Lectures.

<b>Lecture Code</b>	<b>Lecture Title</b>	<b>Sponsor</b>
	<b>200-Level: Combat Ready Training</b>	
A-01*	MAGTF Organization	MCCES
A-02*	MACCS Organization	MCCES
A-03*	The Six Functions of Marine Aviation	MAWTS-1
A-04*	Control of Aircraft & Missiles	MAWTS-1
A-05*	Offensive Air Support	MAWTS-1
A-06*	Assault Support	MAWTS-1
A-07*	Electronic Warfare	MAWTS-1
A-08*	Aerial Reconnaissance	MAWTS-1
A-09*	Anti-Air Warfare	MAWTS-1
A-09*	Air Tasking Order/Special Instructions	MCCES
A-10*	MACCS Training Management	Local MACG
A-11*	MACCS Reference Material	MCCES
A-12*	Local AOR Contingencies & OP PLANS	Local MACG
A-13*	ROE Overview	Local MACG
A-14*	MACCS Communications	MAWTS-1
A-15*	CTAPS Overview	MAWTS-1

Lecture Code	Lecture Title	Sponsor
A-16*	Data Link Symbolology	USAADASCH, MARCORDET
A-17*	Manual Crosstell Procedures	USAADASCH, MARCORDET
A-18*	Encryption & Authentication Procedures	MCCES
A-19*	COMSEC & Crypto Handling	MCCES

	300-Level: Combat Qualified Training	
B-01*	Missile and UAV Threat to the MAGTF	MAWTS-1
B-02*	Fixed Wing Threat to the MAGTF	MAWTS-1
B-03*	Rotary Wing Threat to the MAGTF	MAWTS-1
B-04*	REC Threat	MAWTS-1
B-05*	Armor Threat to the MAGTF	MAWTS-1
B-06*	AOR Specific Threat & OP PLANS	Local MACG
B-07*	MACCS Agencies	MAWTS-1
B-08*	TACC	MAWTS-1
B-09*	TAOC	MAWTS-1
B-10*	DASC	MAWTS-1
B-11*	ATC Detachment	MAWTS-1
B-12*	LAAD Bn	MAWTS-1
B-13*	MWCS	MAWTS-1
B-14*	AC2W-ISR	MAWTS-1
B-15*	Multi TADIL Network	MAWTS-1
B-16*	USMC Aviation Ordnance	MCCES
B-17*	Phasing Control Ashore	MAWTS-1
B-18*	Airspace Planning/Management (Combat Airspace)	Local MACG
B-19*	Tanker Management	MAWTS-1
B-20*	Armed Reconnaissance	MAWTS-1
B-21*	UAV Overview	MAWTS-1
B-22*	Link Architecture & Procedures	Local MACG
B-23*	Introduction to Personnel Recovery	MAWTS-1
B-24*	NEO Execution	MAWTS-1
B-25*	Execution Checklist	MAWTS-1
B-26	MEU Operations	EWTG
B-27	DATF	MAWTS-1
B-28	R2P2	EWTG

	400-Level: Full Combat Qualified Training	
C-01*	Integrated Combat Airspace Command & Control (ICAC <sup>2</sup> )	Local MACG MAWTS-1
C-02*	Joint Air Operations	MAWTS-1
C-03*	TBM and CM Defense	MAWTS-1
C-04*	JTAO Procedures	MCCES
C-05*	Law of War and ROE	MAWTS-1
C-06*	SIS Aircraft	MAWTS-1

(\*) The lecture code is standardized throughout all MACCS related syllabi, and is used to link the Aviation Training and Readiness Information Management System (ATRIMS) software to a specific T&R event within this syllabus. Lecture codes may not be listed sequentially.

2. External academic courses of instruction required to complete the syllabus are listed below:

COURSE  
None

ACTIVITY  
N/A

#### 111. TRAINING REFERENCES

1. The following training references shall be utilized to ensure safe and standardized training procedures, performance steps, grading criteria, and equipment operation:

MCO P1500.44C	Battle Skills Training/Essential Subjects Handbook
MCO 3500.27	Operational Risk Management (ORM)
MCO 4400.182	MFP SYS Plan/Eng/Eval Device
MCO P4790.7	Marine Corps Integrated Maintenance Management System (MIMMS) Field Procedures Manual
MCRP 3-0A	Unit Training Management
MCRP 3-0B	How to Conduct Training
MCWP 3-15.1	Machine Guns and Machine Gun Gunnery
MCWP 3-22	Anti-Air Warfare
MCWP 3-25.10	Employment of Low Altitude Air Defense Battalion
MCWP 3-25.11	Low Altitude Air Defense Gunner Handbook
MCWP 3-40.3B	Radio Operators Handbook
MCRP 3-25.10A	Low Altitude Air Defense Gunner Handbook
MCRP 3-40.3C	Antenna Handbook
JPUB 3-56.1	Tactical Command and Control Planning Guidance and Procedures for Joint Operations (Procedures and Formats)
OPNAVINST 3500.39	Operational Risk Management (ORM)
FM 5-20	Camouflage
FM 5-25	Explosives and Demolition
FM 24-18	Tactical Single-Channel Radio Communications Techniques
FM 24-19	Radio Operators Handbook
FM 34-130	Intelligence Preparation of the Battlefield
FM 44-1	US Army Air Defense Artillery Employment
FM 44-3	US Army Air Defense Artillery Employment Chaparrel/Forward/Vulcan/Stinger
FM 44-8	Combined Arms for Air Defense
FM 44-16	Chaparrel/Vulcan/Stinger/Platoon Combat Operations
FM 44-18	Army Air Defense Employment (Stinger)
FM 44-18-1	Stinger Team Operations, 31 Dec 1984
FM 44-31	Tactics, Techniques, and Procedures for Avenger Squad Operations
FM 44-44	Avenger Platoon, Section, and Squad Operations
FM 44-46	MANPADS Platoon, Section, and Team Operations
FM 44-64	SHORAD Battalion and Battery Operations
FM 44-80	Visual Aircraft Recognition Manual
FM 44-100-2	Air Defense Artillery Reference Handbook
FMFM 3-1	Command And Staff Action
FMFM 5-60	Control of Aircraft and Missiles

TM 9-1425-433-10	Operator's Manual for Guided Missile Battery Control Central, Vehicle Pedestal Mounted Stinger Air Defense Weapon System. 30 March 1989 (Change 4, March 1990).
TM 9-1425-429-12	Operator's and Organizational Maintenance Manual: Stinger Guided Missile System. Consisting of: Weapon Round Partial Gripstock Trainer Handling Guided Missile Launcher M-60, Interrogator Set AN/PPX-3A, AN/PPX-3B, Interrogator Set Programmer AN/GSX-1A
TM 4700-15/41	Equipment Repair Procedures Manual
TM 9-1425-2586-10	Operator's Manual for Chaparral M48A2 Air Defense Guided Missile System. (Chaparral Air Defense Guided Missile System). 28 June 1984 (Change 8, February 1990)
TM 9-1440-433-24-1	Technical Manual, Organizational, Direct Support and General Support Maintenance Manual for On-Equipment Maintenance Guided Missile Battery Control Central, Vehicle Mounted ANTWQ-1
TM 11-5820-348-15	Antenna Equip RC-292
TM 11-5820-401-10-2	Operator's Manual: Radio Sets AN/VRC-12, AN/VRC-43 through AN/VRC-49 (used with an intercom system)
TM 11-5820-890-10-1	SINCGARS Ground Combat Net Radio, ICOM
TM 11-5820-890-10-2	Operator's Manual for Radio Sets, AN/PRC-119, AN/VRC-87, AN/VRC-88, AN/VRC-89, AN/VRC-90, AN/VRC-91, AN/VRC-92
TM 11-5820-890-10-4	Operator for Radio Set AN/PRC-119, VRC 87-92
TM 11-5825-291-13	Satellite Signal Navigation Set AN/PSN-11
TM 11-5830-340-12	Operator's and Organizational Maintenance Manual for Intercommunication Set, AN/VIC-1(V)
TM 11-5895-1194-24P-2	Interrogator Set Programmer AN/GSX-1/A
TM 07748A-12/1	PRC-104 RADIO SET
TM 07508A-14	Improved Elem Assembly Antenna AS-2259/GR
TM 07749A/07743-12/1A	MRC-138/GRC-193
TM 08487A-12&P/4	Digital Comm Terminal ANPSC-2
TM 08487A-14/1	Volume I DCT
TM 09480A-12&P/1	Operation And Maintenance Instructions With Repair Parts List AN/UPS-3 Tactical Defense Alert Radar
TM 09871A-12/1	Guided Missile Battery Control Central Vehicle Mounted AN/TWQ-1
TM 2320-10/6A	Operator's Manual for M998/M1038
TM 10152A-24&P	Organizational and Intermediate Maintenance Instructions including Repair Parts List for Machine Gun, .50 Cal, M3P
TM 10296A-10/1-1	Field Handbook Expeditionary Air Defense System (EADS) Director Unit (DU)
TB 11-5825-291-10-2	Soldiers Guide for the PLGR (Precision Lightweight GPS Receiver)
BR-20278	Contingency Fire Unit Users Manual
BR-19972A	FDU/WDU Users Manual, KL-43C Operators Manual
TD44-6920-702-10	Stinger Troop Proficiency Trainer (STPT Instructors Manual, February 1993)
ACP-125	Allied Communications Publication Communication Instructions Radiotelephone Procedures
CMS-1	Communications Security Material System Manual
CMS-21A	CMS Policy and Procedures for Navy Electronic Key Management System Tiers 2 and 3
ACP-125	Allied Communications Publication Communication Instructions Radiotelephone Procedures

NWP 3-01.01	Anti-Air Warfare Manual
N/A	AN/PAS-18 Receiver Infrared System Student Guide, April 1994
N/A	EADS Software Guide
N/A	Electromagnetic Compatibility Analysis Center (ECAC) Guide
N/A	Falcon View, Data Base Admin Guide, April 92
N/A	Tactical Combat Operations System (TCO) Users Guide
N/A	Theatre Battle Management Core Systems (TBMCS) Users Guide

## 120. LIVE/SIMULATOR EVENT TRAINING FOR LAAD OFFICERS

### 1. COMBAT CAPABLE STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
USAADASCH			60.00%

### 2. COMBAT READY STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
SYSTEM TRAINING	8	10	2.00%
OPERATIONS	9	72	8.00%
QUALIFICATION	1	48	5.00%
COMBAT READY TOTALS:	18	130	15.00%

### 3. COMBAT QUALIFICATION STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
SYSTEM TRAINING	2	3.5	5.00%
OPERATIONS	2	51	5.00%
QUALIFICATION	2	96	10.00%
COMBAT QUALIFICATION TOTALS:	6	150.5	20.00%

### 4. FULL COMBAT QUALIFICATION STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
SYSTEMS	1	3	1.00%
OPERATIONS	2	20	4.00%
FULL COMBAT QUALIFICATION TOTALS:	3	23	5.00%

## 130. LIVE/SIMULATOR EVENT PERFORMANCE REQUIREMENTS

1. General. The majority of the low altitude air defense syllabi is ground training which requires in-depth integration within the MACCS. Likewise, development of MAGTF training involving extensive integration with the ground combat element is mandatory in the development of a fully Combat Qualified LAAD Officer.

a. Live Training. Training event condition codes listed as L (live) and L/S (live preferred/simulator optional) in this syllabus designate training to be conducted without the aid of simulator devices. Training not conducted in the live training environment shall be replaced with simulation where applicable as indicated in the condition code. Any engagement of a friendly

aircraft during an aircraft tracking cycle constitutes failure of that cycle. A failed cycle must be repeated until it is successfully accomplished.

b. Simulator Training. Training event condition codes listed as S (simulator) and S/L (simulator preferred/live optional) in this syllabus designate training to be conducted in the Moving Target Simulator (MTS), Institutional Conduct of Fire Trainer (ICOFT), or using the Stinger Troop Proficiency Trainer (STPT) where applicable. Training not conducted in the MTS shall be replaced with live tracking exercises where applicable as indicated in the condition code. Any engagement of a friendly aircraft during an aircraft tracking cycle constitutes failure of that cycle. A failed cycle must be repeated until it is successfully accomplished.

2. Minimum Performance Time for Syllabus "Write-Off"/Designations. Any LAAD personnel may receive credit for successful completion of any syllabus requirement (except qualifications) upon either a written, oral, or practical demonstration of proficiency, at the commanding officer's discretion. Completion of 70 percent of any syllabus requirement (except qualifications) may be "written-off" as complete at the discretion of the designated evaluator. Qualifications require a completed performance evaluation, and the designation signed by the commanding officer.

3. Evaluation of Training. Evaluation of those portions of the syllabus which are academic in nature will be conducted by either written/oral examination or a combination of the two means. Operational and system related subjects will be evaluated by practical application means whenever possible. Performance evaluation to qualify for LAAD designations will be conducted per T&R Manual, Administrative, and the standardized evaluation forms provided by the MOS sponsor.

#### 131. COMPONENTS OF A T&R EVENT

1. General. An event contained within a T&R manual is an individual or collective training standard and contains seven or eight components, dependent on the tier in which they are contained:

1/ OPS-XXX	2/ 0.5	3/ 4/ T,C,R,E	5/ EQUIP	6/ L/S	(NS)
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Goal. The title of a unit of work which needs to be done in the performance of a Marine's duties. It is a clearly stated performance-oriented action requiring learned skills and knowledge, i.e., Engage a rotary wing aircraft.

Requirement. The condition(s) set for the real-world or combat circumstances in which the tasks are to be performed. They indicate what is provided (equipment, tools, materials, manuals, aids, etc.), environmental constraints or conditions under which the task is performed, and any specific cues or indicators to which the performer must respond. When resources or safety requirements limit the conditions, this should be stated.

Performance Standards. The performance standard indicates the basis for judging the effectiveness of the performance. It consists of a carefully worded statement that identifies the proficiency level expected when the task is performed. It is not guidance, it is inviolate. Performance standards are specified in terms of accuracy, speed, sequencing, quality of performance, adherence to procedural guidelines, etc.

Performance Steps. *Listed for 100-level T&R events only.*  
Performance steps are the actions or decisions required to fulfill proficiency established by the standard. The major performance steps that are required to perform the task to proficiency are listed in the order of performance. Minor steps are not listed.

Prerequisite. Provides a listing of academic training or other T&R events which must be completed prior to satisfying the task.

Reference. Listing of doctrinal or reference publications that may assist the trainee in satisfying the performance standards, or the trainer in evaluating the effectiveness of task completion.

Ordnance. A listing of ordnance types and quantities required to satisfy the task.

External Syllabus Support. A listing or description of the external support requirements that may be required to satisfy completion of the task. May include range requirements, support aircraft, targets, training devices, or other personnel and equipment.

#### NOTES:

- 1/ Events are coded per Appendix B of the Administrative T&R Manual.
- 2/ Projected Event Duration is furnished as a planning tool.
- 3/ Denotes the applicable Program of Instruction (Basic POI is understood). POI Codes: **T** = transition; **C** = conversion; **R** = refresher.
- 4/ An "**E**" indicates an Evaluated event.
- 5/ The equipment or activity sub-category is listed. Equipment and activity codes: **AVG** = Avenger; **COMM** = Communications; **EMPL** = Employment; **GBDL** = Ground Based Data Link; **GUN** = M3P .50 Caliber Machine Gun; **IFF** = Identification Friend or Foe; **NAV** = Navigation; **PLNG** = Planning; **STG** = Stinger; and **SPTE** = Support Equipment.
- 6/ Condition Code: **L** = live training; **S** = simulator training; **L/S** = live preferred/simulator optional; **S/L** = simulator preferred/live optional; **N** = Night; **NS** = Night Vision Device; Where contained within ( ) denotes optional conditions.

### 132. COMBAT CAPABLE TRAINING

#### 1. Familiarization Training (FAM)

a. Purpose. To develop basic knowledge of the principles and concepts relating to LAAD operations.

#### b. General

- (1) Administrative Notes. None.
- (2) Prerequisite. None.

c. Team Requirements. Familiarization training is to be conducted as individual training.

d. Academic Training. Appropriate academic training and lectures for the Combat Capable Stage will be conducted at the schoolhouse per the Program of Instruction (POI).

e. Live and Simulator Event Training (1 Event, 1.0 Hour)

FAM-140      1.0              E              PLNG              L

Goal. Demonstrate knowledge of the LAAD Bn.

Requirement. In an academic setting, the officer will be given a written exam on the LAAD Bn. The officer will score at least 80% correct on the written exam.

Performance Standards. At a minimum the officer will correctly:

- (1) State the organization of the LAAD Bn, to include number of batteries, platoons, sections, and teams per unit.
- (2) State the geographical location of all LAAD units.
- (3) State mission of the LAAD Bn.
- (4) State the doctrinal radio nets organic to the battalion.
- (5) Identify the staff sections of the battalion and their functions.
- (6) State levels of support the battalion provides to MAGTFs.

Performance Steps. None.

Prerequisite. None.

Reference. MCWP 3-25.10 and MCWP 3-25.11.

Ordinance. None.

External Syllabus Support. None.

## 2. Systems Training (SYS)

a. Purpose. To develop requisite skills and working knowledge relating to the characteristics, capabilities, limitations, and operation of LAAD related systems or equipment which LAAD Officers are required to operate and maintain.

### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training.

c. Team Requirements. At the 100- and 200-level, systems training is executed as individual training. The Marine being evaluated is responsible for demonstrating a mastery of each element of any collective task at the appropriate organizational level.



d. Academic Training. Appropriate academic training and lectures for the Combat Capable Stage will be conducted at the schoolhouse per the Program of Instruction (POI).

e. Live and Simulator Event Training (23 Events, 24.0 Hours)

SYS-140      4.0                      E                      TRNG                      S

Goal. Visually identify aircraft.

Requirement. In an academic environment, the officer when given a test of various aircraft (based on current threat), and with the aid of audio visual equipment, will correctly identify the aircraft.

Performance Standards. Given an aircraft recognition test consisting of 50 aircraft, the officer will successfully identify a minimum of 40 aircraft within a time of 5 seconds per aircraft and a 5 second delay between aircraft.

Performance Steps. The officer will use the Wing, Engine, Fuselage, and Tail (WEFT) technique to identify the aircraft.

Reference. FM 44-80.

Ordinance. None.

External Syllabus Support. None.

SYS-141      3.0                                      HMV                                      L

Goal. Perform preventive maintenance checks and service (PMCS) on the HMMWV.

Requirement. In a practical application exercise, the officer when given a fully equipped HMMWV, tools, and equipment will perform PMCS on the vehicle.

Performance Standards. The standards for this task are met when the officer successfully PMs the vehicle, and properly fills out the PM checklist.

Performance Steps. The officer will explain, or explain how to:

- (1) Check the engine compartment.
- (2) Check the instruments.
- (3) Check for drive train leakage.
- (4) Check the body.
- (5) Add fluids and lubricants.
- (6) Fill out PM checklist.

Prerequisite. Appropriate periods of instruction.

Reference. TM-923-280-10 and Unit PM checklist.

Ordinance. None.

External Syllabus Support. None.

L

L

Prerequisite. Appropriate periods of instruction.

Reference. MCWP 3-25.10, FM 44-18-1, FM 44-1, and FM 44-18.

Ordnance. None.

External Syllabus Support. None.

SYS-144

0.5

STG

L

Goal. Perform the 13 critical weapons check procedures.

Requirement. Given a FHT, the officer will perform the 13 critical checks on a training Stinger missile.

Performance Standards. Accurately perform the appropriate inspections on the following devices. One Field Handling Trainer (FHT) will be provided for the evaluation.

Performance Steps. The officer will perform the checks in the following sequence:

- (1) Blowout disk.
- (2) Squib igniter leads.
- (3) Launch tube.
- (4) Humidity indicator.
- (5) IR/Transmissive window.
- (6) Range ring.
- (7) Rear sight reticle.
- (8) Acquisition indicators.
- (9) Safety and actuator switch.
- (10) Uncage bar.
- (11) Firing trigger.
- (12) Latch mechanism.
- (13) Battery Coolant Unit.

Reference. FM 44-18-1.

Ordnance. None.

External Syllabus Support. None.

SYS-145

0.5

STG

S

Goal. State the hangfire, misfire, and dud emergency procedures for the Stinger missile.

Requirement. In an academic environment, given a written exam, with a tactical scenario, the officer will correctly state the proper hangfire, misfire, and dud procedures for a Stinger weapon.

Performance Standards. Given a tactical scenario the officer will state the proper procedures in accordance with references.

Performance Steps. The officer will state the procedures for a hangfire/misfire of the Stinger missile.

Prerequisite. Appropriate periods of instruction.

Reference. FM 44-18-1, TM 9-1425-429-12, and TM 9-1425-433-10.

Ordnance. None.

External Syllabus Support. None.

SYS-146      1.0                                      STG                                      S/L

Goal. State the emergency destruction procedures for the Stinger missile and all ancillary equipment.

Requirement. In an academic setting, the officer will describe the desired methods for destroying the Stinger missile and all ancillary team equipment. The student will ensure that all parts that are essential to the weapon-round operation are destroyed beyond operation using available equipment as prescribed in TM 9-1425-429-12, Chapter 12.

Performance Standards. Given locally fabricated/acquired training aids, the officer will simulate the proper emergency destruction procedures for the Stinger missile and all ancillary equipment to prevent enemy use.

Performance Steps. The officer will list, describe, and simulate the following destruction procedures:

- (1) Destroy the missile by firing it in the direction of the enemy (preferred method).
- (2) Select a destruction point which will cause the greatest destruction to the enemy and will not hinder or endanger friendly forces.
- (3) Destroy the weapon and equipment by burning or demolition.
- (4) Destroy the weapon and equipment by gunfire (this is the least preferred method for the missile).
- (5) Demonstrate proper destruction of all Avenger equipment.

Prerequisite. Appropriate periods of instruction.

Reference. MWCP 3-25.10 and TM 9-1425-433-10.

Ordnance. None.

External Syllabus Support. To ensure availability of training aids, make arrangements in advance to acquire needed support from appropriate Marine organizations.

SYS-147      2.0                                      COMM                                      L

Goal. Operate a secure SINCGARS in single channel (SC).

Requirement. During a practical application exercise, the officer, given a communication requirement will prepare and operate the SINCGARS in single channel (SC). The following equipment is provided:

- (1) Secure SINCGARS prepared for operation.
- (2) KYK-13/TSEC Fill Device.
- (3) AN/CYZ-10/Fill Device.

Performance Standards. Standards are met when secured radio check is made in accordance with TM 11-5820-890-10-1, TM 11-5820-890-10-2, and TM 11-5820-890-10-4.

Performance Steps. The officer will perform the following steps when preparing the SINCGARS for operation:

- (1) Install battery(ies).
- (2) Install antenna.
- (3) Connect handset H-250.
- (4) Set battery life condition.

The officer will perform the following steps when operating the SINCGARS single channel (SC):

- (1) Performs before-operation PMCS.
- (2) Load correct frequency.
- (3) Load traffic encryption key.
- (4) Make a secure radio check.
- (5) Perform after-operation PMCS.

Prerequisite. Appropriate periods of instruction.

Reference. FM 24-18, FM 24-19, ACEOI, TM 11-5820-890-10-1, TM 11-5820-890-10-1, and TM 11-5820-890-10-3.

Ordinance. None.

External Syllabus Support. None.

SYS-148

0.5

COMM

S

Goal. State the handling of CMS software (receive, safeguard, use, and proper destruction procedures).

Requirement. Given the reference and in an academic environment, state how to properly store, use, and destroy CMS materials.

Performance Standards. During a written examination, the officer will state the correct procedures for handling CMS material.

Performance Steps. The officer will:

- (1) State the proper handling procedures for CMS material.
- (2) State proper transportation considerations for CMS.
- (3) State proper destruction procedures for comsec material in accordance with CMS-21A.
- (4) Define Two Person Integrity (TPI).

Prerequisite. None.

Reference. CMS-21A.

Ordinance. None.

External Syllabus Support. None.

SYS-149

0.5

COMM

L

Goal. Operate Intercommunication set AN/VIC-1.

Requirement. During a practical application exercise, the officer is given a fully powered up Avenger with AN/VRC-91 and will operate the AN/VIC-1.

Performance Standards. Intercommunications set is properly operated from the control box, per the given publications, and performance measures 1 through 5 are performed correctly within 15 minutes. Satisfactory completion of each performance measure, in sequence is required.

Performance Steps. The officer will perform the following steps:

- (1) Set MAIN JUNCTION BOX-AMPLIFIER controls (AM-1780/VRC).
- (2) Connect audio accessories.
- (3) Operate the CVC/AVC helmet's PUSH-TO-TALK switch.
- (4) Operate the intercom system.
- (5) Shut down the system.

Prerequisite. Appropriate periods of instruction.

Reference. TM 11-5830-340-12, TM 11-5820-890-10-1, and TM 11-5820-890-10-2.

Ordinance. None.

External Syllabus Support. None.

SYS-150

3.0

NAV

L

Goal. Operate the current Global Positioning System (GPS).

Requirement. During a practical application exercise, the officer, given a current GPS and a tactical scenario will successfully navigate.

Performance Standards. Utilizing current GPS, the officer will correctly input required data, move to, and navigate from designated points.

Performance Steps. The officer will perform the following steps in order:

- (1) View position display.
- (2) Enter waypoints.
- (3) Navigation operations.
- (4) Vehicle land navigation.

Prerequisite. Appropriate periods of instruction.

Reference. TM 11-5825-291-13.

Ordinance. None.

External Syllabus Support. Designated navigation course.

SYS-151

3.0

COMM

L

Goal. Operate the RTU.

Requirement. During a practical application exercise, the officer, given a tactical scenario will employ the RTU from either the MANPAD or Avenger configuration.

Performance Standards. The officer will receive and process early warning data utilizing the RTU.

Performance Steps. The officer will perform the following steps in order:

- (1) Setup RTU with associated communication assets.
- (2) Initialize RTU.
- (3) Configure system as appropriate.
- (4) Input emplacement data (i.e. site, DLRP, CCRP, etc.).
- (5) Input appropriate units of measure.
- (6) Input site positions.
- (7) Input corridor (MRR).
- (8) Input line (i.e. FEBA, FSCL, etc.).
- (9) Input volume (i.e. MEZ, FEZ, JEZ, etc.).
- (10) Input checkpoint.
- (11) Select CDT Emulator; input the following:
  - (a) Air Density.
  - (b) Limits.
  - (c) North Reference.
  - (d) BIT Test.
- (12) Receive data.
- (13) Process data.
- (14) Slew to target utilizing Slew-to-cue techniques.
- (15) Update Site location using current GPS.

Prerequisite. Appropriate periods of instruction.

Reference. EADS Software Guide.

Ordinance. None.

External Syllabus Support. RCMAT or targets of opportunity.

SYS-152

1.0

AVG

L

Goal. Perform duties during missile load and unload (Avenger).

Requirement. During a practical application exercise, the officer is advised by an evaluator that his Avenger has expended its missiles and is directed to prepare the unit for reload. The officer will proceed to load a Standard Vehicle Mounted Launcher (SVML) with 1 Captive Flight Trainer (CFT). Having the missile pod loaded and fire unit in power-up status, the officer will then unload the missile from the Avenger. The following equipment is provided:

- (1) A fully-equipped Avenger.
- (2) One CFT.

Performance Standards. Load the missile pods per procedures outlined in TM 9-1425-433-10, paragraph 3-46. Accomplish this task within 3 minutes. Unload the missile pod per procedures outlined in TM 9-1425-433-10, paragraph 3-46. Accomplish this task in 3 minutes.

Performance Steps. The officer performs the following steps during missile load:

- (1) Position the turret for loading.
- (2) Prepare the missile pods.
- (3) Install missile into pod.

The officer performs the following steps during missile unload:

- (1) Position the turret for unloading.
- (2) Unload missile from pod.
- (3) Install and latch access doors.
- (4) Rotate turret to 270 degrees azimuth and elevate the pods to maximum (68 degrees).

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-429-12.

Ordinance. None.

External Syllabus Support. None.

SYS-153

1.0

GUN

L

Goal. Mount and remove the M3P machine gun from the Avenger.

Requirement. During a practical application exercise, the officer will correctly mount and remove the machine gun. One fully equipped Avenger and the assistance from another team member are available.

Performance Standards. The machine gun is mounted per procedures outlined in TM 9-1425-433-10, paragraph 3-12. Accomplish this task within 5 minutes. The machine gun has been removed from the Avenger per procedures outlined in TM 9-1425-433-10, paragraph 3-12. Accomplish this task within 5 minutes.

Performance Steps. The officer will perform the following steps when mounting the M3P machine gun:

- (1) Position the turret for machine gun mounting.
- (2) Install machine gun in elastic cradle and secure with trunion pin.
- (3) Install link and brass collector.
- (4) Connect ammunition feed chute to rigid feed chute.
- (5) Set MAIN PWR selector to OFF, COMM, or SAFE.
- (6) Connect electrical connector to solenoid sensor assembly.

The officer will perform the following steps when removing the M3P machine gun:

- (1) Position turret to dismount machine gun.
- (2) Disconnect electrical connector from solenoid sensor assembly.
- (3) Set ARM switch to ARM.
- (4) Pull GUN circuit breaker and set ARM switch to SAFE.
- (5) Power down the fire unit.
- (6) Disconnect ammunition feed chute from rigid feed chute.
- (7) Remove link and brass collector.
- (8) Pull trunion pin to release the gun elastic cradle.
- (9) Remove machine gun from mount.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.



Ordinance. None.

External Syllabus Support. None.

SYS-154

1.0

GUN

L

Goal. Perform boresight checks and adjustments on the M3P machine gun and optical sight.

Requirement. During a practical application exercise, the officer, given a fully equipped Avenger, boresight kit, tools, and assistance from another team member will boresight the machine gun and optical sight. A reference point at least 1,000 meters away must be visible for boresighting.

Performance Standards. The machine gun boresight is checked and adjusted per TM 9-1425-433-10, paragraph 3-16. Task is accomplished within 18 minutes. Evaluator will point out reference point used to boresight optical sight, and verify the FLIR cross hairs are on the center of boresight target per TM 9-1425-433-10, paragraph 3-15.

Performance Steps. Each officer will perform the following steps for boresight alignment:

- (1) Perform azimuth adjustment.
- (2) Perform elevation adjustment.
- (3) Remove boresight telescope from gun barrel.
- (4) Install brass and link collector.

Each officer will perform the following steps for boresight check and adjustment (optical sight):

- (1) Set MAIN PWR selector to ENGAGE.
- (2) Set FLIR to WFOV.
- (3) Select reference point (minimum 1,000 meters) and rotate turret to center FLIR cross hairs on the reference point.
- (4) Check that optical sight cross hairs are centered on the selected reference point.
- (5) Adjust sight in azimuth to align vertical line of sight cross hairs with vertical line of reference center point.
- (6) Verify that vertical line of sight cross hairs are aligned with vertical line of reference points.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SYS-155

1.0

GUN

L

Goal. Load and unload the M3P machine gun.

Requirement. During a practical application exercise, the officer, given a fully-equipped Avenger and 250 rounds of dummy

.50 caliber linked blank ammunition, will properly load and unload the machine gun with the assistance of another team member.

Performance Standards. The machine gun has been loaded and unloaded per procedures outlined in TM 9-1425-433-10, paragraph 3-47. Loading is accomplished within 9 minutes and unloading within 3 minutes.

Performance Steps. The officer will use the following steps when loading the machine gun:

- (1) Position turret for loading.
- (2) Load the ammunition magazine.
- (3) Remount ammunition magazine.
- (4) Install brass and link collector.
- (5) Chamber a round into the machine gun.

The officer will use the following steps when unloading the machine gun:

- (1) Position turret for unloading.
- (2) Perform clearing action for machine gun.
- (3) Set ARM switch to SAFE.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. 100 rounds of dummy .50 caliber linked ammunition.

External Syllabus Support. None.

SYS-156

1.0

AVG

L/S

Goal. Perform duties during emplacement of the Avenger.

Requirement. During a practical application exercise, a firing position has been selected for the officer's Avenger and his team leader directs him to emplace and prepare for action. Assistance from a team member and a fully-equipped Avenger are available.

Performance Standards. Emplace and prepare the Avenger for action per procedures outlined in TM 9-1425-433-10, paragraphs 3-29 and 3-32. Accomplish this task in 8 minutes.

Performance Steps. Each officer will perform the following steps:

- (1) Input the data into CDT.
- (2) Disconnect CDT and CVC helmet.
- (3) Close canopy and install canopy cover.
- (4) Connect CDT and CVC helmet to receptacle on RCU.
- (5) Prepare RCU for operation.
- (6) Perform intercom check with officer.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10 Operator's Manual for Guided Missile Battery Control Central, Vehicle Pedestal Mounted Stinger Air Defense Weapon System.

Ordinance. None.

External Syllabus Support. None.

SYS-157

0.5

AVG

S

Goal. State the emergency procedures for hangfire/misfire (Avenger).

Requirement. Given a tactical scenario, the officer will state the emergency procedures for hangfire/misfire (Avenger).

Performance Standards. State the procedures in accordance with TM 9-1425-433-10.

Performance Steps. The officer will state the following procedures for a misfire/hangfire in the Avenger:

- (1) Set ARM switch to SAFE.
- (2) Position turret with both ends of missile pointed away from personnel with pod elevation set to about +20 degrees.
- (3) Power down the fire unit.
- (4) Observe safety procedures by remaining in the turret during the 10 minute waiting period.
- (5) Upon mission completion, the missile may be removed from the pod by the operating team after a 60-minute waiting period.
- (6) Notify EOD of situation.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SYS-158

0.5

GUN

L

Goal. State the immediate action for a malfunction of the M3P machine gun.

Requirement. Given a tactical scenario, the officer will state the immediate action for a malfunction of the M3P machine gun.

Performance Standards. In accordance with TM -1425-433-10.

Performance Steps. The officer will state the following steps when performing immediate action for a malfunction of the M3P machine gun:

- (1) State immediate action procedures (cool weapon).
- (2) State immediate action procedures (hot weapon).

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SYS-159

1.0

AVG/GUN

L

Goal. Troubleshoot the Avenger and M3P machine gun.

Requirement. During a practical application exercise, the officer will correctly perform troubleshooting procedures on a system malfunction of the Avenger, M3P machine gun, and/or a fault message appearing on the CDT. Assistance from a team member and the following are available:

- (1) A fully equipped Avenger fire unit.
- (2) One M3P with tool kit.
- (3) TM 9-1425-433-10.

Performance Standards. A simulated fault may be inserted into the Avenger and M3P machine gun for training purposes. Brief the officer to troubleshoot for the symptom the evaluator names. The symptom should be one of those listed in TM 9-1425-433-10, table 3-3 (Avenger) and table 3-4 (M3P machine gun). The officer will troubleshoot the fire unit, per TM 9-1425-433-10, paragraph 3-3, table 3-3 (Avenger) and paragraph 3-3, table 3-4 (M3P machine gun). Correct the deficiencies and record all uncorrected deficiencies.

Performance Steps. The steps listed below are to be used when trouble shooting the Avenger:

- (1) Inspect fire unit to verify presence of malfunction.
- (2) Select correct probable cause of the malfunction.
- (3) Identify the corrective action required to correct malfunction.
- (4) Record all faults and deficiencies.

The steps listed below are to be used when troubleshooting the M3P machine gun:

- (1) Inspect machine gun to verify presence of a malfunction.
- (2) Select probable cause of the malfunction.
- (3) Identify and perform the corrective action required to correct the malfunction.
- (4) Record all faults and deficiencies.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10 Operator's Manual for Guided Missile Battery Control Central, Vehicle Pedestal Mounted Stinger Air Defense Weapon System, 30 March 1989 (Change 3, March 1990).

Ordinance. None.

External Syllabus Support. None.

SYS-160

0.5

COMM

L

Goal. Perform operator troubleshooting on the SINCGARS.

Requirement. During a practical application exercise, the officer will perform operator troubleshooting on SINCGARS given a SINCGARS operating on a net.

Performance Standards. The standard is met when the officer correctly identifies the inputted fault.

Performance Steps. Each officer will perform the following steps:

- (1) Check power source.
  - (a) Manpack.
  - (b) Vehicular.
- (2) Run RT self-test (BIT).
- (3) Check signal display.
- (4) Check sidetone.

Prerequisite. Appropriate periods of instruction.

Reference. FM 24-18, FM 24-19, ACEOI, and TM 11-5820-890-10-1.

Ordinance. None.

External Syllabus Support. None.

SYS-161

0.5

GUN

L

Goal. Perform operator maintenance on the M3P machine gun.

Requirement. During a practical application exercise, the officer will correctly perform maintenance on the M3P machine gun. A M3P machine gun, gun tool kit, cleaning material, lubricants, and assistance from another team member are available. The machine gun is removed from the fire unit and positioned on a work table.

Performance Standards. The officer will perform operator maintenance on the M3P machine gun per procedures outlined in TM 9-1425-433-10, paragraphs 3-3, 3-9, and 3-13. The officer will accomplish this task within 15 minutes.

Performance Steps. The officer will perform the following steps when conducting operator maintenance on the M3P machine gun:

- (1) Disassemble the weapon.
- (2) Clean the weapon.
- (3) Lubricate the weapon.
- (4) Reassemble the weapon.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SYS-162

1.0

AVG

L

Goal. Perform PMCS on the Avenger.

Requirement. PMCS is due or ordered on the Avenger. During a practical application exercise, the officer will conduct the proper PMCS on the Avenger. The following items are available:

- (1) A fully equipped Avenger.
- (2) TM 9-1425-433-10.

(3) Tools, cleaning materials, and lubricants.

Performance Standards. Sequentially perform all items per TM 9-1425-433-10, table 3-3. Fix and record all deficiencies.

Performance Steps. Each officer will perform the following checks:

- (1) Perform before-operations checks.
- (2) Perform operational checks, inspect BII, and AAL.
- (3) Perform during-operations checks.
- (4) Check optical sight head and sight electronics.
- (5) Perform after-operations checks.
- (6) Perform weekly checks and service batteries.
- (7) Perform monthly checks and check battery box for damage or evidence of corrosion and service.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

### 3. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment and operations, in order to effectively execute a tactical mission as a leader of a LAAD platoon/battery.

#### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. At the 100- and 200-level operations training is executed as individual training. The Marine being evaluated is responsible for demonstrating a mastery of each element of any collective task at the appropriate organizational level.

d. Academic Training. Appropriate academic training and lectures for the Combat Capable Stage will be conducted at the schoolhouse per the Program of Instruction (POI).

#### e. Live and Simulator Event Training (2 Events, 24.5 Hours)

OPS-140

2.0

STG

L

Goal. Establish a team position in the MANPADS and Avenger configurations.

Requirement. During a practical application exercise, the officer given a tactical scenario will properly establish a team position.

Performance Standards. Per the reference, given a tactical scenario properly establish a team position in the MANPAD and Avenger configurations.

Performance Steps. The officer will perform the following steps:

- (1) Select firing positions within 100 meters of the area selected by the section leader.
- (2) Select one alternate position 500 to 1000 meters from primary position.
- (3) Perform all-around visibility and clear fields of fire considerations.
- (4) Demonstrate understanding of line-of-sight communications with section headquarters and supported unit.
- (5) Ensure cover and concealment from enemy observation and ground fire.
- (6) Demonstrate understanding of employment principles.
- (7) Evaluate safety/backblast consideration (5 meters equipment/15 meters personnel).

Prerequisite. SYS-156 and appropriate periods of instruction.

Reference. MCWP 3-25.10, MCWP 3-25.11, FM 44-18, FM 44-18-1, and TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

OPS-141

40.0

PLNG

L

Goal. Plan for the employment of a LAAD platoon.

Requirement. Given a tactical scenario, plan for the employment of a LAAD unit in accordance with MCWP 3-25.10.

Performance Standards. The officer will plan the employment of his platoon/battery for each of the following missions:

- (1) Point defense.
- (2) Surveillance and weapons gap filler.
- (3) Base Defense Zone.
- (4) Defense of a maneuver element.
- (5) Convoy defense.

The officer's plan will address the following:

- (1) IPB (Responsiveness to the threat).
- (2) LAAD capabilities, limitations, and requirements.
- (3) Command/support relationships.
- (4) Air defense priorities.
- (5) Command Post (CP) operations.
- (6) Air defense control measures.
- (7) ID Criteria.
- (8) Rules of engagement.
- (9) Surveillance plan.
- (10) Integration with MACCS.
- (11) Integration with GCE.
- (12) Communications planning.
- (13) GBDL architecture capabilities/limitations.
- (14) Missile re-supply.
- (15) Logistics planning.
- (16) Heliborne operations.

- (17) Night operations.
- (18) Amphibious operations.
- (19) Operational risk management.

Prerequisite. None.

Reference. MCWP 3-25.10, MCWP 3-25.11, ACP-125, FM 24-18, MCRP 3-40.3C, FMFM 3-1, and MCO 3500.27.

Ordinance. None.

External Syllabus Support. None.

#### 4. Surface-to-Air Weapons Training (SAW)

a. Purpose. To develop knowledge and proficiency of LAAD engagement techniques against live aircraft and drones.

##### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. SAW training will be executed as individual training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Capable Stage will be conducted at the schoolhouse per the Program of Instruction (POI).

##### e. Live and Simulator Event Training (4 Events, 5.0 Hours)

<u>SAW-140</u>	<u>1.0</u>	<u>E</u>	<u>STG</u>	<u>S/L</u>
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Goal. Engage a hostile target with the Stinger missile MANPAD.

Requirement. During a practical application exercise, the officer, utilizing the Tracking Head Trainer (THT) or Moving Target Simulator (MTS) will engage a hostile target. The officer is advised that a hostile target has entered his defended area and is within engagement range. The officer will shoulder the weapon and prepare it for firing.

Performance Standards. When using a Stinger THT in place of the actual live weapon, the officer will engage and destroy a target four out of five times while performing this task in an MTS or during a Field Training Exercise (FTX).

Performance Steps. The officer will:

- (1) Interrogate aircraft and listen for the response.
- (2) Track and range target.
- (3) Activate weapon and obtain an acquisition tone.
- (4) Press and hold uncage bar.
- (5) Insert correct superelevation and lead.
- (6) Press trigger to fire weapon.
- (7) Remove BCU within three minutes.



Reference. FM 44-18-1 and TM 9-1425-429-12.

Ordinance. None.

External Syllabus Support. Range for live tracking.

SAW-141      1.0                      E                      AVG                      S/L

Goal. Engage a hostile fixed/rotary wing target with the Avenger.

Requirement. During a practical application exercise, the officer, given an Avenger with an uploaded Captive Flight Trainer (CFT) or utilizing the Institutional Conduct of Fire Trainer (ICOFT) will engage a hostile fixed/rotary wing aircraft (simulated). The Avenger or simulator is powered-up, the MAIN PWR selector is set to ENGAGE, and the ARM switch is set to ARM position.

Performance Standards. Utilizing proper operating procedures and firing techniques, the officer will successfully engage an aerial target in either the Avenger or ICOFT four out of five times.

Performance Steps. The officer will perform the following steps when engaging a hostile fixed/rotary wing target from the Avenger or ICOFT:

- (1) Center target in reticle.
- (2) Press IFF CHALLENGE push button.
- (3) Press and release left thumb switch.
- (4) Press and hold left trigger switch.
- (5) Press and hold right trigger switch for 5 seconds.
- (6) Release left and right trigger switches.
- (7) Press and release left thumb switch.
- (8) Set ARM switch to SAFE position.
- (9) Place MAIN PWR selector in the RUN position.

Reference. FM 44-44 and TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. Radio-Controlled Miniature Aerial Target (RCMAT), targets of opportunity, and live tracking range.

SAW-142      1.0                      E                      AVG,GUN                      L

Goal. Engage an aerial and/or ground target with the M3P machine gun.

Requirement. During a practical application exercise, the officer, given an Avenger loaded with 250 rounds of .50 caliber ammunition, will engage an aerial and/or ground target with the machine gun. The officer may engage the designated target from either the turret or Remote Control Unit (RCU).

Performance Standards. Utilizing proper operating procedures and firing techniques, engage an appropriate aerial and/or ground target. Ensure the machine gun is properly boresighted and aligned per TM 9-1425-433-10.

Performance Steps. After properly loading the machine gun, the officer will engage a designated target from either the turret or RCU. The officer will perform the following steps:

- (1) Arm the weapon system.
- (2) Enable Laser Range Finder (LRF).
- (3) Select the gun mode.
- (4) Track and range the target.
- (5) Engage the target.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. 250 rounds of linked .50 cal. live ammunition.

External Syllabus Support. 250 rounds .50 caliber ammunition (with 4:1 tracer mix), firing range and appropriate ground and/or aerial targets, RCMAT, and/or Remotely Piloted Target Systems (RPVTS).

SAW-143

2.0

E

STG,AVG

L

Goal. Engage an aerial target with a Stinger missile (MANPADS or Avenger).

Requirement. During a live firing exercise, the officer, given a Stinger missile (MANPAD or Avenger) will engage an aerial target.

Performance Standards. Utilizing proper operating procedures and firing techniques, the officer will engage an aerial target from either the MANPAD or Avenger configuration. NOTE: When firing from the Avenger the officer can employ either the turret or the RCU.

#### Performance Steps

##### (1) MANPAD:

- (a) Track and range target.
- (b) Activate weapon and obtain an acquisition tone.
- (c) Insert correct superelevation and lead.
- (d) Press trigger to fire weapon and continue to Track target for three to five seconds.
- (e) Remove BCU within three minutes.

##### (2) Avenger:

- (a) Slew turret in direction of target.
- (b) Arm the weapon system.
- (c) Enable Laser Range Finder.
- (d) Track and range target.
- (e) Activate weapon and obtain acquisition tone.
- (f) Press left and right trigger and hold for three to five seconds.

Prerequisite. Appropriate periods of instruction.

Reference. FM 44-18-1, TM 9-1425-429-12, and TM 9-1440-433-24-1.

Ordnance. PL-89/PL-90/PL-93 Stinger missiles, PN-15/PN-16 Stinger gripstocks (Basic/RMP), L-477 Rocket Flares, J-106 Rocket motors (3 or 4 per target based on range requirements).

External Syllabus Support. Appropriate aerial target (Ballistic Aerial Target, BQM-107, BQM-108, Banshee) and firing range.

### 133. COMBAT READY TRAINING

#### 1. Systems Training (SYS)

a. Purpose. To develop requisite skills and working knowledge relating to the characteristics, capabilities, limitations, and operation of LAAD related systems or equipment which LAAD Officers are required to operate and maintain.

#### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. Systems training will be executed as individual training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Ready Stage as depicted in paragraph 110.

#### e. Live and Simulator Event Training (8 Events, 7.0 Hours)

<u>SYS-240</u>	<u>1.0</u>	<u>R</u>	<u>COMM/IFF</u>	<u>L</u>
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Goal. Handle CMS software (receive, safeguard, use, and proper destruction procedures).

Requirement. Given the reference and in a practical application environment, properly store, use, and destroy CMS materials.

Performance Standards. Individuals will utilize two person integrity, ensure proper transportation, and complete destruction records in accordance with the CMS-1.

Prerequisite. None.

Reference. CMS-1.

Ordnance. None.

External Syllabus Support. None.

<u>SYS-241</u>	<u>1.0</u>	<u>R</u>	<u>COMM</u>	<u>L</u>
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Goal. Operate organic communication security keying devices.

Requirement. With the aid of a communicator(s), operate organic security keying devices during a practical application exercise using the below listed equipment:

- (1) KYK-13.
- (2) KOI-18.
- (3) KY-99.
- (4) AN/CYZ-10.
- (5) Appropriate radio assets.

Performance Standards. The officer will generate a variable, store a variable, transfer a stored variable, operate, zeroize, and pass secure communications.

Prerequisite. SYS-240.

Reference. None.

Ordinance. None.

External Syllabus Support. None.

<u>SYS-242</u>	<u>1.0</u>	<u>R</u>	<u>IFF</u>	<u>L</u>
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Goal. Program the IFF.

Requirement. During a practical application exercise the Marine will program the IFF given an IFF belt pack, IFF programming equipment, and a mission capable Avenger Weapon System as prescribed in TM 9-1425-429-12.

Performance Standards. Utilizing proper procedures correctly program four days of mode four IFF.

Prerequisite. SYS-241.

Reference. TM 9-1425-429-12.

Ordinance. None.

External Syllabus Support. None.

<u>SYS-243</u>	<u>0.5</u>	<u>R</u>	<u>COMM</u>	<u>L</u>
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Goal. Operate the KL-43.

Requirement. Given the reference, appropriate keying material, an SL-3 complete KL-43 and associated radios, operate the KL-43.

Performance Standards. The officer will draft, encrypt, transmit, receive and de-crypt, a KL-43 message in accordance with the reference.

Prerequisite. SYS-241.

Reference. BR-19972A.

Ordinance. None.

External Syllabus Support. None.

SYS-244      4.0              R              COMM              L

Goal.    Establish and maintain HF Secured Communications.

Requirement.    During a practical application exercise, with the aid of a communicator(s), the officer, given an SL-3 complete AN/PRC-104, KY-99, Digital Communications Terminal (DCT), and an AS-2259 antenna, the officer will establish HF Communications. Construct and use a field expedient antenna.

Performance Standards.    The officer will correctly establish HF voice and data communications.

Prerequisite.    SYS-241.

Reference.    TM 08487A-12&P/4 and TM 07748A-12/1.

Ordinance.    None.

External Syllabus Support.    Frequencies.

SYS-245      1.0              R              COMM              L

Goal.    Operate the AN/MRC-138.

Requirement.    During a practical application exercise, the officer, given a SL-3 complete AN/MRC-138 with ancillary keying devices, and the aid of a communicator(s), will operate the AN/MRC-138.

Performance Standards.    In accordance with the reference, the officer will establish communications with another station and pass secure/nonsecure voice communications.

Prerequisite.    SYS-244.

Reference.    TM 07749A/07743-12/1A, TM 07508A-14, and TM 11-5820-348-15.

Ordinance.    None.

External Syllabus Support.    None.

SYS-246      1.0              R              SPTE              L

Goal.    Install and operate the AN/UPS-3 Tactical Defense Alert Radar (TDAR).

Requirement.    During a practical application exercise, the officer, with the aid of another Marine, given the reference and an SL-3 complete TDAR, will install and operate the TDAR.

Performance Standards.    The officer and one Marine will assemble the TDAR within ten minutes. Once assembled, operation will be conducted in accordance with the reference.

Prerequisite.    None.

Reference.    TM 09480A-12&P/1.

Ordinance. None.

External Syllabus Support. None.

SYS-247      0.5              R              STG/SPTE      S

Goal. State the emergency destruction procedures for all ancillary command post equipment.

Requirement. Given a list of all ancillary command post equipment, state the emergency destruction procedures for each.

Performance Standards. In accordance with established procedures, correctly state the destruction of the following equipment:

- (1) TDAR/RTU.
- (2) HMMWV.
- (3) Communications hardware.
- (4) COMSEC materials/devices.
- (5) Ammunition.
- (6) Mission essential documents/materials.

Prerequisite. None.

Reference. MCWP 3-25.10 and CMS-1.

Ordinance. None.

External Syllabus Support. None.

## 2. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment and operations, in order to effectively execute a tactical mission as a member of a leader of a LAAD platoon/battery.

### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. Operations training will be executed as individual training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Ready Stage as depicted in paragraph 110.

### e. Live and Simulator Event Training (9 Events, 62.5 Hours)

OPS-250      4.0              R              PLNG              L

Goal. Conduct a detailed Intelligence Preparation of the Battlefield (IPB).

Requirement. Given a platoon/battery level Marine Aviation Planning Problem (MAPP), an area of operations, mission, and a threat, perform a detailed IPB.

Performance Standards. Conduct and brief a detailed IPB in accordance with FM 34-130 to include area evaluation, terrain analysis, weather analysis, threat evaluation, threat integration, Air Order of Battle (AOB), Ground Order of Battle (GOB), Electronic Order of Battle (EOB), Reconnaissance Capabilities, and terrorist/unconventional threat. Use Requests for Information (RFI) and Commanders Critical Information Requirements (CCIR) to supplement specific intelligence requirements needed for the mission.

Prerequisite. None.

Reference. FM 34-130.

Ordnance. None.

External Syllabus Support. None.

OPS-251      1.0                      R                      SPTE                      L

Goal. Establish a LAAD platoon/battery command post.

Requirement. Given a tactical scenario, area of operation, unit SOP and all associated equipment the officer will establish a command post.

Performance Standards. The officer will establish a command post per the unit SOP, considering at a minimum the following:

- (1) Communications/command and control.
- (2) Cover and concealment/passive air defense measures.
- (3) Local security.
- (4) Safety requirements.
- (5) Accessibility.
- (6) Integration requirements.

\*NOTE: CP position will be constructed IAW the references and Unit SOP.

Prerequisite. SYS-240, SYS-241, SYS-243, SYS-244, SYS-245, and SYS-247.

Reference. MCWP 3-25.10 and unit SOP.

Ordnance. None.

External Syllabus Support. Appropriate training area.

OPS-252      2.0                      R                      GBDL                      L

Goal. Design and establish a Ground Based Data Link (GBDL).

Requirement. During practical application, with the aid of a communicator(s), sensor, RTUs, and SINCGARS radios, design and establish a GBDL network.

Performance Standards. The officer will design and establish a GBDL network with at least two receiving stations using single channel (SC), frequency hopping (FH) Mode, and a MACCS, joint or coalition sensor.

Prerequisite. None.

Reference. TM 09480A-12&P/1 and EADS software guide.

Ordnance. None.

External Syllabus Support. MACCS, joint, or coalition sensor.

OPS-253      1.0                      R                      COMM                      L/S

Goal. Use proper communications procedures.

Requirement. Given the references, a tactical radio, authentication/encryption sheet, and a tactical field message book, the officer will establish communications, and transmit and receive messages utilizing proper communications procedures.

Performance Standards. The officer must accurately demonstrate proficiency in the use of:

- (1) Proper radio/telephone procedures.
- (2) Use of brevity codes.
- (3) Use of tactical field message book.
- (4) Authentication.
- (5) Message encryption and decryption.
- (6) Beadwindow procedures.
- (7) Gingerbread procedures.
- (8) MIJI reporting procedures.
- (9) Lost communications procedures.
- (10) Communications jamming countermeasures.

Prerequisite. None.

Reference. ACP-125, MCWP 3-25.11, MCWP 3-40.3B, and MWRP 3-25.10A.

Ordnance. None.

External Syllabus Support. None.

OPS-254      10.0                      R                      NAV                      L

Goal. Conduct day and night navigation.

Requirement. Given a current Global Positioning System (GPS), map, compass, and protractor, successfully navigate to designated locations during periods of daylight, darkness, or reduced visibility.

Performance Standards. The officer must accomplish the following:

- (1) Find 5 of 5 locations during the day using a map and compass.
- (2) Find 4 of 5 locations during times of darkness or reduced visibility using a map and compass.
- (3) Find 5 of 5 locations during the day using the current GPS.
- (4) Find 5 of 5 locations at night using the current GPS.

Prerequisite. None.



Reference. MCO P1500.44C and TM 11-5825-291-13.

Ordinance. None.

External Syllabus Support. Appropriate range/training area.

OPS-255

48.0

R,E

PLNG

L/S

Goal. Plan for the employment of a LAAD unit.

Requirement. Given a tactical scenario, plan for the employment of a LAAD unit in accordance with MCWP 3-25.10.

Performance Standards. The officer will plan the employment of his platoon/battery for each of the following missions:

- (1) Point defense.
- (2) Surveillance and weapons gap filler.
- (3) Base Defense Zone.
- (4) Defense of a maneuver element.
- (5) Convoy defense.

The officer's plan will address the following:

- (1) IPB (Responsiveness to the Threat).
- (2) LAAD capabilities, limitations, and requirements.
- (3) Command/support relationships.
- (4) Air defense priorities.
- (5) Command Post (CP) operations.
- (6) Air defense control measures.
- (7) ID Criteria.
- (8) Rules of engagement.
- (9) Surveillance plan.
- (10) Integration with MACCS.
- (11) Integration with GCE.
- (12) Communications planning.
- (13) GBDL architecture capabilities/limitations.
- (14) Missile re-supply.
- (15) Logistics planning.
- (16) Heliborne operations.
- (17) Night operations.
- (18) Amphibious operations.
- (19) Operational risk management.

Prerequisite. OPS-250, OPS-251, and OPS-252.

Reference. MCWP 3-25.10, MCWP 3-25.11, MCRP 3-40.3C, ACP-125, FM 24-18, FMFM 3-1, and MCO 3500.27.

Ordinance. None.

External Syllabus Support. None.

OPS-256

3.0

R

TRNG

L

Goal. Plan and implement a unit level training program.

Requirement. Given Marine Corps orders and current readiness information, plan and implement a unit level training program.

Performance Standards. The officer will develop a training plan based on unit's plans, the Commander's Intent, and the unit's core competencies per the reference.

Prerequisite. None.

Reference. MCWP 3-25.10, MCRP 3-25.10A, MCRP 3-0A, and MCRP 3-0B.

Ordinance. None.

External Syllabus Support. None.

OPS-257

2.0

R

TRNG

L

Goal. Plan and implement a unit level operational risk management program.

Requirement. Given the Marine Corps order, plan and implement a unit level operational risk management program.

Performance Standards. The officer will develop a unit operational risk management program based on current planning, training, and operations.

Prerequisite. None.

Reference. OPNAVINST 3500.39 and MCO 3500.27.

Ordinance. None.

External Syllabus Support. None.

OPS-258

1.0

R

PLNG

L

Goal. Plan for the employment of small arms in an air defense role.

Requirement. Given a threat scenario, plan and brief the employment of small arms in an air defense role.

Performance Standards. The officer will plan and brief the small arms air defense plan ensuring the following elements are included:

- (1) Techniques of leading fixed wing aircraft.
- (2) Techniques of leading rotary wing aircraft.
- (3) Use of volume and weapons mix.

Prerequisite. None.

Reference. MCWP 3-25.10 and MWCP 3-25.11.

Ordinance. None.

External Syllabus Support. None.

### 3. Qualification Training

- a. Purpose. To qualify as a Combat Qualified LAAD Officer.

b. General

(1) Administrative Notes. Performance evaluation to qualify for LAAD designations will be conducted per Chapter 6, T&R Manual, Administrative, and the standardized evaluation forms located in the appendix to this syllabus. Upon successful completion of a qualification event, the officer should be designated by the unit commanding officer and have a letter placed in their MACCS Performance Record stating their qualification.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. Qualification training will be executed as individual training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualified Stage as depicted in paragraph 110.

e. Live and Simulator Event Training (1 Event, 24.0 Hours)

<u>QUAL-280</u>	<u>48.0</u>	<u>R,E</u>	<u>EMPL</u>	<u>L/S</u>
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Goal. Qualify as a Combat Ready LAAD Officer.

Requirement. Given a tactical scenario at the battery/platoon level the officer will be evaluated by commanding officer or WTI.

Performance Standards. Upon completion of the 200 syllabus, the officer must pass an evaluation.

Prerequisite. Complete 200-level tasks.

Reference. MCWP 3-25.10, MCWP 3-25.11, MCRP 3-40.3C, ACP-125, FM 24-18, FMFM 3-1, and MCO 3500.27.

Ordinance. None.

External Syllabus Support. None.

134. COMBAT QUALIFICATION TRAINING1. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment and operations, in order to effectively execute a tactical mission as a member of a leader of a LAAD platoon/battery.

b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. Operations training will be executed as collective training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualified Stage as depicted in paragraph 110.

e. Live and Simulator Event Training (2 Events, 51 Hours)

OPS-350      3.0              C                      PLNG                      L

Goal. Receive and issue an operations order.

Requirement. Given a five paragraph order, warning order, or frag order, prepare and issue an appropriate order to subordinate unit leaders.

Performance Standards. The officer will prepare and present an operations order which accurately disseminates the information received from the battery/battalion commander.

Prerequisite. None.

Reference. MCWP 3-25.10, MCWP 3-25.11, and FMFM 3-1.

Ordinance. None.

External Syllabus Support. None.

OPS-351      48.0              C,R,E                      EMPL                      L

Goal. Employ a LAAD unit.

Requirement. In a field environment, given a LAAD platoon/battery, employ in accordance with MCWP 3-25.10.

Performance Standards. The officer will plan and employ his unit for all of the following missions:

- (1) Point defense.
- (2) Surveillance and weapons gap filler.
- (3) Base Defense Zone.
- (4) Defense of a maneuver element.
- (5) Convoy defense.

The officer's plan will address the following:

- (1) IPB (Responsiveness to the Threat).
- (2) LAAD capabilities, limitations, and requirements.
- (3) Command/support relationships.
- (4) Air defense priorities.
- (5) Command Post (CP) operations.
- (6) Air defense control measures.
- (7) ID Criteria.
- (8) Rules of engagement.
- (9) Surveillance plan.
- (10) Integration with MACCS.
- (11) Integration with GCE.
- (12) Communications planning.
- (13) GBDL architecture capabilities/limitations.
- (14) Missile re-supply.
- (15) Logistics planning.
- (16) Heliborne operations.
- (17) Night operations.
- (18) Amphibious operations.

(19) Operational risk management.

Prerequisite. OPS-245 and OPS-340.

Reference. MCWP 3-25.10, MCWP 3-25.11, and FMFM 3-1.

Ordinance. None.

External Syllabus Support. None.

## 2. Surface-to-Air Weapons Training (SAW)

a. Purpose. For LAAD leaders to maintain knowledge and proficiency of LAAD engagement techniques against live aircraft and drones.

### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. None for staff noncommissioned officers (SNCO) and officers.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualified Stage as depicted in paragraph 110.

### e. Live and Simulator Event Training (2 Events, 3.5 Hours)

<u>SAW-360</u>	<u>2.0</u>	<u>R,E</u>	<u>STG/AVG</u>	<u>S</u>
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Goal. Conduct multiple target engagements with the Avenger and MANPAD.

Requirement. Given a tactical scenario that includes enemy and friendly AOB, ROE, and air defense control measures, engage multiple fixed and rotary wing aircraft in the MTS and ICOFT. Targets will fly mixed profiles and employ infrared countermeasures (IRCM). Engagements will be conducted during times of daylight and darkness or reduced visibility.

Performance Standards. The officer will demonstrate proper target selection and fire distribution techniques. The officer must properly identify target in accordance with established rules of engagement. The officer must demonstrate proper detection, acquisition, ranging, superelevation, and firing techniques in accordance with firing doctrine guidance. Actions are to be evaluated using the MTS and ICOFT. A total of 10 multiple-target scenarios are required. Engagement procedures for cold weather and NBC operations will be utilized in at least two scenarios.

Prerequisite. None.

Reference. FM 44-18-1, TM 9-1425-429-12, and TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SAW-361      1.5      R,E      AVG/GUN      S

Goal. Engage aircraft with the M3P machine gun.

Requirement. Given an ICOFT and a tactical scenario that includes enemy and friendly air and ground order of battle, ROE, Air Defense Control Measures, and appropriate aerial targets, conduct engagements with the M3P. The officer will engage fixed and rotary wing aircraft from a static position and while on-the-move. Separate engagements will be conducted against aircraft flying head-on, crossing, outgoing, and pop-up profiles. Engagements will be conducted during times of daylight and darkness or reduced visibility.

Performance Standards. The officer must demonstrate proper detection, ranging, and firing techniques using the manual and automatic tracking modes from the turret. Actions are to be evaluated using the ICOFT. A total of 20 engagements are required. Engagement procedures for cold weather, NBC operations, and shoot on-the-move will be utilized in at least four separate engagements.

- (1) FW night engagements.
- (2) RW night engagements.
- (3) FW day engagements.
- (4) RW day engagements.

Prerequisite. None.

Reference. MCWP 3-25.11 and TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

### 3. Qualification Training (QUAL)

a. Purpose. To qualify as a Combat Qualified LAAD Officer.

b. General

(1) Administrative Notes. Performance evaluation to qualify for LAAD designations will be conducted per Chapter 6, T&R Manual, Administrative, and the standardized evaluation forms located in the appendix to this syllabus. Upon successful completion of a qualification event, the officer should be designated by the unit commanding officer and have a letter placed in their MACCS Performance Record stating their qualification.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. Qualification training will be executed as collective training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualified Stage as depicted in paragraph 110.

e. Live and Simulator Event Training (2 Events, 96.0 Hours)

QUAL-380      48.0              R,E              EMPL              L

Goal. Qualify as a Combat Qualified LAAD Officer.

Requirement. Given a tactical scenario, and during a formal or informal Marine Corps Combat Readiness Evaluation (MCCRE), the officer will be evaluated.

Performance Standards. The officer must pass the MCCRE.

Prerequisite. Complete 300-level tasks.

Reference. MCWP 3-25.10, MCWP 3-25.11, MCRP 3-40.3C, ACP-125, FM 24-18, FMFM 3-1, and MCO 3500.27.

Ordinance. None.

External Syllabus Support. None.

QUAL-381      48.0              R,E              EMPL              L

Goal. Qualify as a Combat Qualified LAAD Platoon or Battery.

Requirement. Given a formal or informal MCCRE, qualify as a Combat Qualified LAAD platoon or battery.

Performance Standards. The platoon or battery must pass the MCCRE.

Prerequisite. Complete 300-level tasks and prerequisites listed in paragraph 104.2b.

Reference. MCWP 3-25.10, MCWP 3-25.11, MCRP 3-40.3C, ACP-125, FM 24-18, FMFM 3-1, and MCO 3500.27.

Ordinance. None.

External Syllabus Support. None.

### 135. FULL COMBAT QUALIFICATION TRAINING

#### 1. Systems Training

a. Purpose. To develop requisite skills and working knowledge relating to the characteristics, capabilities, limitations, and operation of LAAD related systems or equipment which LAAD Officers are required to operate and maintain.

#### b. General

(1) Administrative Notes. The battalion must identify a specific need within the command before an officer will pursue tasks above the 300-level.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. Systems training will be executed as individual training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Full Combat Qualified Stage as depicted in paragraph 110.

e. Live and Simulator Event Training (1 Event, 3.0 Hours)

SYS-440      3.0      R      PLNG      L

Goal. Use aviation mission planning tool products.

Requirement. During a practical application exercise the officer, given a mission, will utilize products from at least one of the following aviation mission planning tools if available:

- (1) Falcon View.
- (2) C2PC.
- (3) TCO.
- (4) TBMCS.
- (5) SPEED.

Performance Standards. Use and incorporate Aviation Planning tools into mission planning.

Prerequisite. Complete 300-level tasks.

Reference. Falcon View, Data Base Admin Guide Apr 92, Electromagnetic Compatibility Analysis Center (ECAC) Guide, MCO 4400.182, Tactical Combat Operations System (TCO), and TBMCS.

Ordinance. None.

External Syllabus Support. Falcon View, Data Base Admin Guide Apr 92, C2PC, MCO 4400.182, Tactical Combat Operations System (TCO), and TBMCS.

2. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment and operations, in order to effectively execute a tactical mission as a leader of a LAAD platoon/battery.

b. General

(1) Administrative Notes. The battalion must identify a specific need within the command before an officer will pursue tasks above the 300-level.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 106.

c. Team Requirements. Operations training will be executed as individual training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Full Combat Qualified Stage as depicted in paragraph 110.



e. Live and Simulator Event Training (2 Events, 10.0 Hours)OPS-45010.0PLNGL

Goal. Plan for LAAD employment in a Joint/Combined environment.

Requirement. Given a tactical scenario, the officer will plan for the employment of a LAAD unit in a Joint/Combined environment.

Performance Standards. The officer will plan LAAD employment in a Joint/Combined environment including the following:

- (1) Joint/Combined air defense weapon systems.
- (2) Joint/Combined air surveillance assets.
- (3) Joint/Combined terminology.
- (4) Joint/Combined interoperability.

Prerequisite. QUAL-280.

Reference. MCWP 3-25.10, MCWP 3-25.11, MCWP 3-22, FMFM 5-60, NWP 3-01.01, and JPUB 3-56.1.

Ordnance. None.

External Syllabus Support. None.

OPS-45110.0PLNGL

Goal. Plan for LAAD operations.

Requirement. Given a tactical scenario, plan for the employment of LAAD units in the following areas of operation:

- (1) Jungle operations.
- (2) Desert operations.
- (3) Cold weather operations.
- (4) Mountain operations.
- (5) Urban terrain.
- (6) Amphibious operations.

Performance Standards. The officer will plan for LAAD employment in all areas of operation specifying the following:

- (1) Fires.
- (2) Maneuver.
- (3) Command and Control.
- (4) Logistics/CSS.
- (5) Intelligence.
- (6) Force protection.

Prerequisite. OPS-351, OPS-352, and OPS-353.

Reference. MCWP 3-25.10 and MCWP 3-25.11.

Ordnance. None.

External Syllabus Support. None.

140. SPECIAL TRAINING REQUIREMENTS1. Instructor Training Events

a. Purpose. To train personnel to conduct LAAD operations under various environmental conditions and during special operations.

b. Live Training (1 Event, 420 Hours)

QUAL-577      420.0      E      LAAD

Goal. Attain designation as a Weapons and Tactics Instructor (WTI).

Requirement. Successfully complete WTI Course.

Performance Standards. Successfully complete the Weapons and Tactics Instructors Course conducted by MAWTS-1 as a GBAD student and be assigned the additional MOS of 7277, Weapons and Tactics Instructor-Air Control.

Prerequisite. QUAL-280, OPS-350, OPS-351, OPS-352, and OPS-353.

Reference. None.

Ordinance. None.

External Syllabus Support. None.

160. EXPENDABLE ORDNANCE REQUIREMENTS

Table 1-7.-Expendable Ordnance Requirements.

ORDNANCE	100- LEVEL
Dummy .50 cal. linked ammunition	250 rds
Live .50 cal. linked ammunition	250 rds
Stinger missile	1
Gripstock	1
L477 Rocket flares	3
J106 Rocket motor	4
Aerial Target	1

\*NOTE: All 100-level ordnance training requirements are completed at USAADASCH.

170. PROFICIENCY INTERVALS. Tables 1-8, 1-9, and 1-10 contain the proficiency intervals for the Combat Readiness, Combat Qualification, and Full Combat Qualification training levels.

Table 1-8.--LAAD Officer Proficiency Interval for the Combat Readiness Training Level.

EVENT	CODE	HOURS	PROFICIENCY INTERVAL	CRP	T	C	R	E	CONDITIONS & REMARKS
SYS	240	1	12	0.25			X		L
	241	1	12	0.25			X		L
	242	1	12	0.25			X		L
	243	0.5	12	0.25			X		L
	244	1	12	0.25			X		L
	245	1	12	0.25			X		L
	246	1	12	0.25			X		L
	247	0.5	12	0.25			X		S
OPS	250	4	12	0.89			X		L
	251	1	12	0.89			X		L
	252	2	12	0.89			X		L
	253	1	12	0.89			X		L/S
	254	2	12	0.89			X		L
	255	48	12	0.89			X	X	L/S
	256	2	12	0.89			X		L
	257	2	12	0.89			X		L
	258	0.5	12	0.88			X		L
QUAL	280	48	12	5.0			X	X	L

Table 1-9.--LAAD Officer Proficiency Interval for the Combat Qualification Training Level.

EVENT	CODE	HOURS	PROFICIENCY INTERVAL	CRP	T	C	R	E	CONDITIONS & REMARKS
OPS	350	1.5	12	2.5		X			L
	351	48	12	2.5		X	X	X	L
SAW	360	1	36	2.5			X	X	L
	361	1.5	36	2.5			X	X	L
QUAL	380	48	24	5.0			X	X	L
	381	48	24	5.0			X	X	L

Table 1-10.--LAAD Officer Proficiency Interval for the Full Combat Qualification Training Level.

EVENT	CODE	HOURS	PROFICIENCY INTERVAL	CRP	T	C	R	E	CONDITIONS & REMARKS
SYS	440	3	24	1.0					L
OPS	450	10	24	2.0					L
	451	10	24	2.0					L

180. EVENT UPDATE CHAINING. Table 1-11 contains the event update chaining for the LAAD Officer.

Table 1-11.--LAAD Officer Combat Ready and Combat Qualification Training Event Update Chaining.

EVENTS	EVENTS UPDATED
240	
241	
242	
243	
244	
245	
246	
247	
250	
251	244, 247
252	
253	
254	
255	250, 252
256	
257	
258	
280	Entire 200-level syllabus
350	
351	251, 255, 350
360	
361	
380	280, 350, 351
381	380
440	
450	250, 255
451	250, 255
577	381, Entire 400-level syllabus

# T&R MANUAL, LAAD

## CHAPTER 2

### LOW ALTITUDE AIR DEFENSE (LAAD) SECTION LEADER/PLATOON SERGEANT/OPERATIONS CHIEF (MOS 7212)

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CHAPTER 2

LAAD SECTION LEADER/PLATOON SERGEANT/OPERATIONS CHIEF (SECT LDR/PLT SGT/OPS CHIEF) (MOS 7212)

200. INTRODUCTION

1. The purpose of the Marine Aviation Training and Readiness (T&R) program is to provide the commander with standardized programs of instruction for all aviation personnel. The goal is to develop unit warfighting capabilities, not to measure the proficiency of individuals. Syllabi are based on specific performance standards designed to ensure proficiency in core competencies. An effective T&R program is the first step in providing the Marine Air Ground Task Force (MAGTF) Commander with an Aviation Combat Element (ACE) capable of accomplishing any and all of its stated missions. The T&R program provides the fundamental tools for commanders to build and maintain unit Combat Readiness. Using these tools, unit training managers can construct and execute an effective training plan which supports the unit's mission essential tasks.

2. Unit training management is the application of the Marine Corps Training Principles and the Systems Approach to Training to satisfy the training requirements of commanders at all levels in order to accomplish their wartime mission. Guidance concerning unit training management and the process for establishing effective unit training management programs are contained in MCRP 3-0A, *Unit Training Management Guide*, and form the basis for the development of this T&R Manual. Familiarity with MCRP 3-0A will enhance understanding of the Systems Approach to Training used in T&R development and Marine Corps Unit Training Management principles.

3. To maintain congruity in aviation and ground T&R programs, CG TECOM (C4610) is coordinating an update to the aviation unit evaluation mechanism. Efforts are underway to incorporate Collective Training Standards (CTS) into aviation T&R manuals. The goal of this effort is to replace MCCRES Mission Performance Standards (MPS) with T&R CTS and utilize the T&R as the unit evaluation mechanism. Like MPS, CTS are criteria that specify mission and functional area unit proficiency standards for combat, combat support, and combat service support units.

4. The effort to replace MCCRES MPS with T&R manual CTS is in the development phase. The concept is to create separate unit chapters in all aviation T&R manuals which contain unit CTS in the form of unit events. CTS will be derived and implemented into T&R manuals using existing unit MCCRES MPS as a baseline. Unit evaluation will be standardized in T&R manuals, not in a separate document. CG TECOM (C4610) plans to cancel unit MCCRES orders as respective unit CTS chapters are approved. Until unit T&R CTS are formally approved, MCCRES shall be utilized as the aviation unit evaluation standard.

201. CORE COMPETENCIES/SKILLS

1. Core competency serves as the foundation of the T&R program. Core competencies are those core capabilities and skills which support the Mission Essential Task List (METL) derived from MCWP 3-2, *Aviation Operations*, and T/O mission statements, which are realistically expected to be accomplished in combat. Core competencies for the LAAD Bn are listed in paragraph 201.3.

2. Mission. The mission of the LAAD Bn is to provide close in, low altitude surface-to-air weapons fires in defense of the MAGTF. LAAD Bns defend forward

combat areas, maneuver forces, vital areas, installations, and/or units engaged in special or independent operations.

### 3. Mission Essential Task List

- a. Command and control the battalion.
- b. Conduct direct support missions.
- c. Conduct general support missions.
- d. Conduct combat operations in a NBC environment.
- e. Plan and coordinate requirements for Command, Control, Communications, Computers, Information, and Intelligence (C4I2) integration within the MAGTF.
- f. Conduct amphibious/expeditionary operations to include the capability to phase control ashore.
- g. Provide 24 hour air defense for special tactical situations and task organizations.

### 4. Battalion Core Capability

a. A core capable LAAD Bn is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 90% equipment/supply readiness and reporting status and 70% T/O on hand in all MOS's. If less than 70%, core capability will be degraded by a like percent. The extent to which a core capable battalion is able to surge beyond its core capability is situation dependent.

b. A section is the smallest employable LAAD element. A core capable battalion is able to employ 11 sections of Combat Capable Avenger/MANPAD teams. A LAAD section is comprised of 5 Stinger teams (any combination of Avenger/MANPAD - two Marines per team), two communicators, and 1 section leader. The typical Avenger section deploys with 5 Avengers. Each Avenger weapon system is equipped with a Forward Looking Infrared (FLIR), Laser Range Finder (LRF), 8 ready Stinger missiles, and a M3P .50 cal machine gun with 285 rounds. This provides 40 Stinger missiles and 1425 .50 cal rounds per Avenger section. The typical MANPAD section deploys with 30 Stinger missiles and 5 thermal imaging sights (AN/PAS-18) providing limited night capability.

c. A core capable section can provide air defense for designated air defense priorities relative to the scope and size of each site (FARP, BDZ and MAGTF maneuver elements). Dependent upon the supported MAGTF, Joint or Coalition operation, appropriate command and control nodes will be employed.

## 202. SUMMARY/INDEX OF LIVE/SIMULATED EVENTS

1. Combat Capable Stage. This stage is accomplished by the LAAD Gunner Training and Readiness Syllabus.
2. Combat Ready Stage. Table 2-1 contains a listing of the Combat Readiness training events and associated page numbers.



Table 2-1.--Combat Readiness Training List.

EVENT	GOAL	PAGE
SYS-220	Operate and maintain organic communication security keying devices.	2-18
SYS-221	Program and operate the IFF Belt Pack.	2-18
SYS-222	Install, operate, and maintain the AN/PRC-104 and associated equipment.	2-18
SYS-223	Operate the KL-43.	2-19
SYS-224	Install, operate and maintain the AN/UPS-3 Tactical Defense Alert Radar (TDAR).	2-19
SYS-225	Operate the Gas Compression Unit (GCU) and the Gas Filtration Unit (GFU).	2-19
SYS-226	Perform emergency destruction procedures for the Stinger missile and all ancillary command post equipment.	2-20
OPS-227	Conduct day and night navigation.	2-21
OPS-230	Maintain proficiency in visual aircraft identification to include instructional skills.	2-21
OPS-231	Conduct a detailed Intelligence Preparation of the Battlefield (IPB).	2-21
OPS-232	Construct a field expedient antenna.	2-22
OPS-233	Establish and maintain Ground Based Data Link (GBDL) with Variable Message Format (VMF) Link.	2-22
OPS-234	Plan for the employment of a LAAD unit.	2-23
QUAL-280	Qualify as a Combat Ready LAAD Section Leader.	2-24

3. Combat Qualification Stage. Table 2-2 contains a listing of the Combat Qualification training events and associated page numbers.

Table 2-2.--Combat Qualification Training List.

EVENT	GOAL	PAGE
OPS-320	Receive and issue an operations order.	2-25
OPS-321	Employ a LAAD unit in General Support(GS).	2-25
OPS-322	Employ a LAAD unit in a Base Defense Zone (BDZ).	2-26
OPS-323	Employ a LAAD unit in Direct Support (DS).	2-26
SAW-360	Conduct multiple target engagements with the Avenger and MANPAD.	2-27
QUAL-330	Qualify as a Combat Qualified LAAD Section Leader.	2-28
QUAL-331	Qualify as a Combat Qualified LAAD Section.	2-29

4. Full Combat Qualification Stage. Table 2-3 contains a listing of the Full Combat Qualification training events and associated page numbers.

Table 2-3.--Full Combat Qualification Training List.

EVENT	GOAL	PAGE
SYS-420	Install, operate, and maintain the AN/MRC-138.	2-29
SYS-421	Use aviation mission planning tool products.	2-30
OPS-430	Plan for LAAD employment in a Joint/Combined environment.	2-31
OPS-431	Plan for LAAD operations.	2-31
OPS-432	Plan and implement a unit level training program.	2-31
QUAL-440	Qualify as a LAAD Platoon Sergeant.	2-32
QUAL-510	Attain designation as a Marine Enlisted Weapons and Tactics Instructor (MEWTI).	2-33

5. Operator Core Skills. Core skills are depicted in the following matrix (table 2-4) and directly support the METL for each unit. Core skills shall be a determining factor in developing T&R training requirements. Core Plus skills and training requirements must receive appropriate prioritization and emphasis based on the training need, and the likelihood of those types of missions being assigned during operations.

Table 2-4.-- Core and Core Plus Skills Matrix.

CORE SKILLS					CORE PLUS SKILLS		
METL	SYS	OPS	SAW	QUAL	SYS	OPS	QUAL
A	220	231		280	420	430	440
	221	232		330	421	431	441
	222	233		331		432	
	223	234					
	224	320					
		321					
B	221	230	360	280		430	440
	224	231	361	330		431	441
	225	233		331			
	226	234					
		320					
		321					
C	221	230	360	280		430	440
	224	231	361	330		431	441
	225	233		331			
	226	234					
		320					
		321					
D	221	230	360	280		430	440
	224	233	361	330		431	441
		234		331			
		320					
		321					
E	224	233	360	280		430	440
		234	361	330		431	441
				331			
F	221	230	360	280		430	440
	224	231	361	330		431	441
	225	233		331			
	226	234					
		320					
		321					
G	221	230	360	280		430	440
	224	231	361	330		431	441
	225	233		331			
	226	234					
		320					
		321					

### 203. UNIT TRAINING POLICIES

1. The unit's training program emphasizes qualifications and the overall combat readiness of the unit. Individual training serves as the building block for overall unit readiness. However, unit training will never be compromised for the training of a select, few individuals. Battalion and battery commanding officers will ensure that this training philosophy is implemented. Unit training must predominate, and battalions must tailor their training plans to ensure unit combat readiness.

2. The training of Marines to perform as an integral aviation unit in combat lies at the heart of the T&R program. Unit readiness and individual readiness are directly related. Individual training and the mastery of individual core skills serve as the building blocks for unit combat readiness. A Marine's ability to perform those critical skills required in combat is essential.

3. The mission performance standards for Marine aviation units are published under MCCRES or appropriate Unit T&R. MCCRES or Unit T&R standards shall form the basis for standards defined within the respective individual T&R. Commanders shall ensure that all tactical training is conducted to a MCCRES/Unit T&R standard. MCCRES or Unit T&R is the unit training standard, and all syllabus events shall be tailored to meet those requirements. Commanders at all levels are responsible for effective aviation training. The conduct of training in a professional manner consistent with Marine Corps standards cannot be overemphasized.

4. Commanders must be cognizant of the numerous factors affecting unit training on a daily basis. Factors which all commanders must address include, but are not limited to:

a. Efficiency. Time and resources expended are measurements for training efficiency. Commanders must ensure that all training increases combat readiness. Unit personnel shall thoroughly plan and effectively execute training to maximize the return on their time and effort.

b. Individual Differences. Commanders must recognize the differences inherent in each individual and should mold flexible training programs to accommodate those differences.

c. Decentralization of Training. The lowest echelon possible shall be responsible for conducting training. Each senior level of command must monitor subordinate commands to ensure safe and efficient training requirements.

5. Commanders shall provide personnel the opportunities to attend formal and operational level courses of instruction as required by this Manual. Attendance at all formal courses must enhance the warfighting capabilities of the unit.

6. Risk Management. Operational Risk Management (ORM) is a process to aid commanders in accomplishing their missions while protecting the force. Commanders, leaders, maintainers, and planners will integrate risk assessment in the decision making process and implement hazard controls to eliminate risk or reduce it to an acceptable level.

7. MACCS Integrated System Training. All elements of the MACCS shall maintain the capability to effectively function as part of an integrated airspace command and control system. Large exercises may not always offer sufficient training opportunity for all team members, and in many cases do not offer sufficient latitude to refine capability upon arrival. The MACCS should conduct MACCS Integrated System Training Exercises (MISTEX) on a regular basis to qualify units and personnel per their respective T&R syllabus. MISTEXs

should focus on the establishment of necessary communications and datalinks between MACCS agencies, and incorporate sufficient simulation and Master Scenario Event List (MSEL) items to exercise and analyze system integration, team coordination, and critical information flow wherever possible. Tactical Digital Information Link (TADIL) capable agencies should conduct frequent "Link" training exercises to maintain proficiency.

8. Surface-to-Air Missile and .50 Caliber Training. Live firing is critical to establish a Marine's confidence in a weapon system. In today's world of reduced budgets, every effort must be made to make each training missile/round count. The challenge is not to simply place weapons on line and aimlessly send missiles/rounds down range. Each missile/round should be scored, recorded and analyzed to ensure that the maximum training benefit is being achieved by the Marine/team who fired it. Subject to the availability of missiles and targets, all 7212's assigned to an active battalion in the operating forces should fire at least one Stinger missile (FIM-92A/C/D) during a three year period. In addition, each 7212 will fire 285 rounds of .50 caliber ammunition from the M3P machine gun annually. Commanders shall ensure those members participating in live missile firing exercises have completed appropriate T&R prerequisites as outlined in the applicable syllabus. All missile and .50 caliber firings should be conducted under conditions which closely simulate actual conditions expected to be encountered in the tactical environment (within applicable safety and range constraints), and include the participation of other elements of the MACCS whenever possible.

#### 204. LAAD SECT LDR/PLT SGT/OPS CHIEF TRAINING PROGRESSION PHILOSOPHY

1. Successful combat units train as they intend to fight and fight as they are trained. The key to successful training for the LAAD Bn lies in raising the quality of an individual's LAAD MOS training. More importantly, however, is the goal of improving the training of the tactical units that make up the core combat elements of the battalion. Individual training is the source of a Marine's trust and confidence in the Corps. Small unit skills, or collective skills, are the foundation on which unit effectiveness is built.

2. The intent of this document is to develop the core warfighting capabilities of LAAD Staff Noncommissioned Officers (SNCOs) and the units they lead. All LAAD Sect Ldr/Plt Sgt/Ops Chief MOS training will be in accordance with this document. The event refly requirements for those SNCOs serving on the battalion staff or in the Headquarters and Service Battery have been adjusted to compensate for the lack of training opportunities presented in the primary MOS.

a. Events contained within the Combat Ready stage of training are individual tasks to be performed by all MOS 7212 SNCOs in the LAAD Bn.

b. Events contained in the Combat Qualification stage of training are collective tasks and will be performed as part of section, platoon, or battery level training evolutions. Upon successful completion, the Sect Ldr/Plt Sgt/Ops Chief will be given Combat Readiness Percentage (CRP) credit individually. QUAL-331 must be accomplished for a specific section, platoon, or battery to attain Combat Qualification. For the section, platoon, or battery to receive CRP credit, the following conditions must be met:

(1) For a SECT, 5 of 5 teams are on-hand and 3 of 5 teams are certified as Combat Qualified.

(2) For a PLT, 9 of 15 T/O teams are on-hand.

(3) For a BTRY, 27 of 45 T/O teams are on-hand.

(4) For a PLT, 2 of 3 SECTs are certified as Combat Qualified.

(5) For a BTRY, 2 of 3 PLTs are certified as Combat Qualified.

c. A break-up of 50% or greater of the combat entity that has been certified as Combat Qualified requires a re-fly for that entity. However, individual Combat Qualification is not lost, nor is the individual Marine's CRP credit accumulated from 200-level T&R events that may have been chained to the completion of 300-level T&R events.

3. Marines receive basic MOS qualification and designation upon graduation from the Stinger Gunner/Avenger Crewmember Course conducted by the Marine Corps Detachment at Ft. Bliss, TX. Additional certifications as a Combat Qualified LAAD Section Leader/Platoon Sergeant/Operations Chief is contingent upon successful completion of the appropriate 300- and 400-level T&R tasks contained within the syllabus, and any of their prerequisites.

## 205. TRAINING PROGRESSION MODEL FOR LAAD SECT LDR/PLT SGT/OPS CHIEF

1. The Training Progression Model for the LAAD Sect Ldr/Plt Sgt/Ops Chief is depicted in figure 2-1.

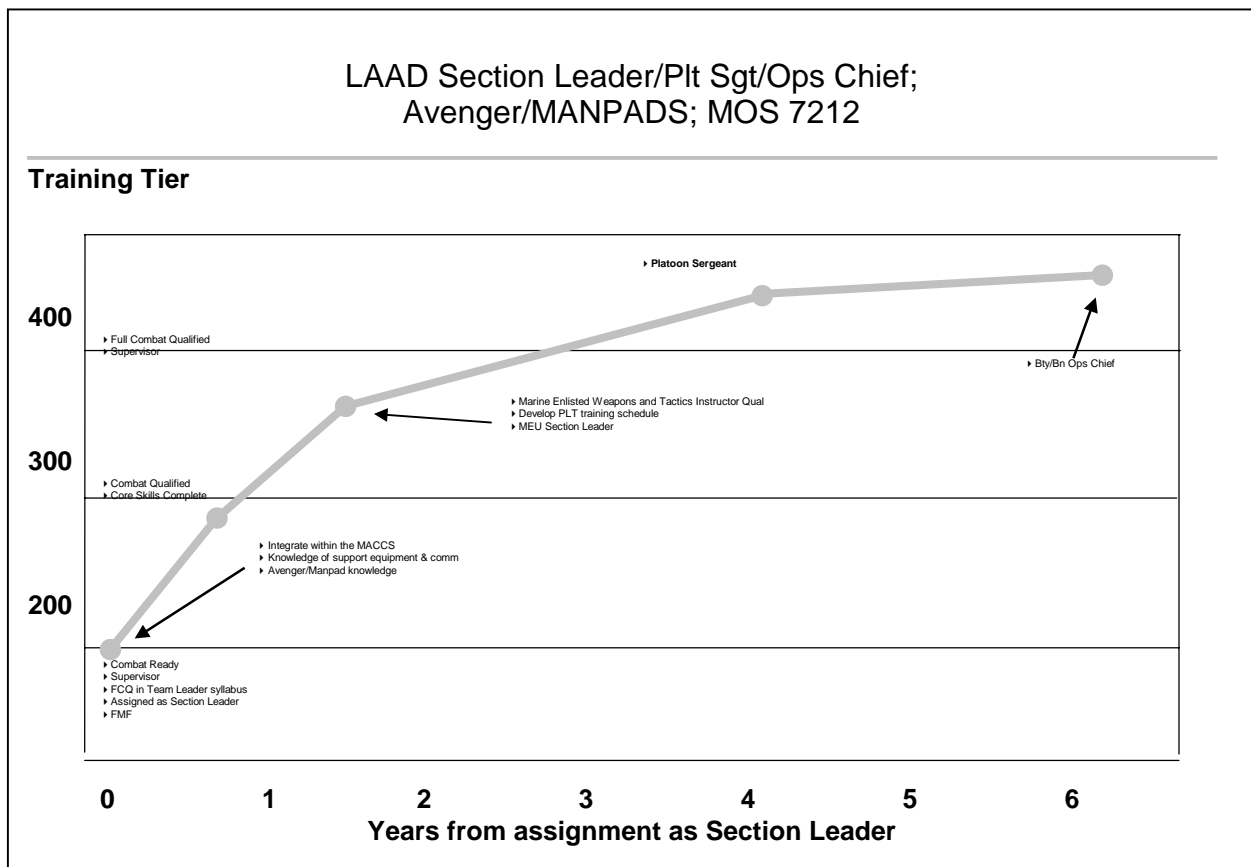


Figure 2.1--LAAD Sect Ldr/Plt Sgt/Ops Chief Training Progression Model.

2. This model depicts the logical progression of qualifications within a unit. The base of each model contains those qualifications an individual reports to the unit with (accession qualifications) after completion of the

MOS-qualifying school. The highest tier of the progression model will contain those qualifications held by only the most experienced personnel within a unit.

3. The first tier (Combat Capable) is accomplished under those same requirements listed for a Combat Qualified Team Leader (Chapter 3, LAAD GUNNER (AVENGER/MANPAD)). This requisite training is normally completed after serving several years with a LAAD unit. With successful completion of the Combat Capable tier, the Marine is ready to progress to the Combat Ready tier.

4. The second tier (Combat Ready) is designed to introduce required individual tasks associated with equipment and responsibilities to a section leader. This tier will ensure proficiency in the core individual competencies. With successful completion of the Combat Ready tier, unit personnel progress to the Combat Qualified tier.

5. The third tier (Combat Qualified) focuses on collective skills and will be that portion of the model that produces viable combat entities and combat leaders. The personnel that are being trained in the Combat Qualified tier are those Marines a commanding officer deems are capable of directing the actions of subordinates during wartime scenarios.

6. The fourth and final tier (Full Combat Qualified) will contain special skills and qualifications. Full Combat Qualified tier personnel are the most experienced personnel within a unit. They are expected to display the maturity and tactical acumen commensurate with this status and assist the commanding officer with oversight of the unit training program.

7. The unit's training progression model provides training officers with a valuable tool to develop training plans. With a clear progression of qualifications delineated, and an emphasis on the qualification of Combat Capable and Combat Ready personnel, training officers have the ability to produce viable training plans. Units will use the model as a point of departure to generate weekly, monthly, quarterly and annual training plans.

## 206. PROGRAMS OF INSTRUCTION (POI) FOR LAAD SECT LDR/PLT SGT/OPS CHIEF

### 1. Basic LAAD Sect Ldr/Plt Sgt/Ops Chief

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-12	Combat Capable Training	Same as Basic Gunner
13-38	Combat Ready Training	LAAD Bn
39-64	Combat Qualification Training	LAAD Bn
65-WC:	Full Combat Qualification Training	LAAD Bn
(18 months): MEWTI (Marine Enlisted Weapons Tactics Instructor) qualification instruction at MAWTS-1.		

### 2. Transition LAAD Sect Ldr/Plt Sgt/Ops Chief

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-12	Combat Capable Training	Same as Basic Gunner
13-38	Combat Ready Training	LAAD Bn
39-64	Combat Qualification Training	LAAD Bn
65-WC	Full Combat Qualification Training	LAAD Bn

3. Refresher LAAD Sect Ldr/Plt Sgt/Ops Chief

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
N/A	Combat Capable Training	Same as Basic Gunner
1-25	Combat Ready Training	LAAD Bn
26-51	Combat Qualification Training	LAAD Bn
52-WC	Full Combat Qualification Training	LAAD Bn

207. SPECIAL DESIGNATIONS

1. LAAD Sect Ldr/Plt Sgt/Ops Chf Qualifications. A Marine is qualified when he has completed the required events of the Combat Qualification and Full Combat Qualification phases of the appropriate T&R syllabus and is certified by a Combat Qualified LAAD Platoon Commander. The Marine shall be designated by the unit commanding officer or unit Weapons Tactics Instructor (WTI) as Combat Qualified and Full Combat Qualified.

210. GROUND/ACADEMIC TRAINING

1. Academic training shall be conducted for each phase/stage of the syllabus. Commanders are strongly encouraged to incorporate the lectures in table 2-5 into their training plans. Where indicated, standardized academic training materials exist and may be obtained from the activity listed as the sponsor.

Table 2-5.--Required T&amp;R Lectures.

<b>Lecture Code</b>	<b>Lecture Title</b>	<b>Sponsor</b>
	<b>200-Level: Combat Ready Training</b>	
A-01*	MAGTF Organization	MCCES
A-02*	MACCS Organization	MCCES
A-03*	The Six Functions of Marine Aviation	MAWTS-1
A-04*	Control of Aircraft & Missiles	MAWTS-1
A-05*	Offensive Air Support	MAWTS-1
A-06*	Assault Support	MAWTS-1
A-07*	Electronic Warfare	MAWTS-1
A-08*	Aerial Reconnaissance	MAWTS-1
A-09*	Anti-Air Warfare	MAWTS-1
A-10*	Air Tasking Order/Special Instructions	MCCES
A-11*	MACCS Training Management	Local MACG
A-12*	MACCS Reference Material	MCCES
A-13*	Local AOR Contingencies & OP PLANS	Local MACG
A-14*	ROE Overview	Local MACG
A-15*	MACCS Communications	MAWTS-1
A-16*	CTAPS Overview	MAWTS-1
A-17*	Data Link Symbology	USAADASCH, MARCORDET
A-18*	Manual Crosstell Procedures	USAADASCH, MARCORDET
A-19*	Encryption & Authentication Procedures	MCCES
A-20*	COMSEC & Crypto Handling	MCCES
	<b>300-Level: Combat Qualified Training</b>	
B-01*	Missile and UAV Threat to the MAGTF	MAWTS-1
B-02*	Fixed Wing Threat to the MAGTF	MAWTS-1

Lecture Code	Lecture Title	Sponsor
B-03*	Rotary Wing Threat to the MAGTF	MAWTS-1
B-04*	REC Threat	MAWTS-1
B-05*	Armor Threat to the MAGTF	MAWTS-1
B-06*	AOR Specific Threat & OP PLANS	Local MACG
B-07*	MACCS Agencies	MAWTS-1
B-08*	TACC	MAWTS-1
B-09*	TAOC	MAWTS-1
B-10*	DASC	MAWTS-1
B-11*	ATC Detachment	MAWTS-1
B-12*	LAAD Bn	MAWTS-1
B-13*	MWCS	MAWTS-1
B-14*	AC2W-ISR	MAWTS-1
B-15*	Multi TADIL Network	MAWTS-1
B-16*	USMC Aviation Ordnance	MCCES
B-17*	Phasing Control Ashore	MAWTS-1
B-18*	Airspace Planning/Management (Combat Airspace)	Local MACG
B-19*	Tanker Management	MAWTS-1
B-20*	Armed Reconnaissance	MAWTS-1
B-21*	UAV Overview	MAWTS-1
B-22*	Link Architecture & Procedures	Local MACG
B-23*	Introduction to Personnel Recovery	MAWTS-1
B-24*	NEO Execution	MAWTS-1
B-25*	Execution Checklist	MAWTS-1
B-26	MEU Operations	EWTG
B-27	DATF	MAWTS-1
B-28	R2P2	EWTG

	400-Level: Full Combat Qualified Training	
C-01*	Integrated Combat Airspace Command & Control (ICAC <sup>2</sup> )	Local MACG MAWTS-1
C-02*	Joint Air Operations	MAWTS-1
C-03*	TBM and CM Defense	MAWTS-1
C-04*	JTAO Procedures	MCCES
C-05*	Law of War and ROE	MAWTS-1
C-06*	SIS Aircraft	MAWTS-1

(\*) The lecture code is standardized throughout all MACCS related syllabi, and is used to link the Aviation Training and Readiness Information Management System (ATRIMS) software to a specific T&R event within MACCS T&R syllabi. Lecture codes may not be listed sequentially.

2. No external academic courses of instruction are required to complete the syllabus.

## 211. TRAINING REFERENCES

1. The following training references shall be utilized to ensure safe and standardized training procedures, performance steps, grading criteria, and equipment operation:

MCO P1500.44C	Battle Skills Training/Essential Subjects Handbook
MCO 3500.27	Operational Risk Management (ORM)
MCO 4400.182	MFP Sys Plan/Eng/Eval Device



MCO P4790.7	Marine Corps Integrated Maintenance Management System (MIMMS) Field Procedures Manual
MCRP 3-0A	Unit Training Management
MCRP 3-0B	How to Conduct Training
MCRP 3-40.3C	Antenna Handbook
MCWP 3-15.1	Machine Guns and Machine Gun Gunnery
MCWP 3-22	Anti-Air Warfare
MCWP 3-25.10	Employment of Low Altitude Air Defense Battalion
MCWP 3-25.11	Low Altitude Air Defense Gunner Handbook
MCRP 3-25.10A	Low Altitude Air Defense Gunner Handbook
MCRP 3-40.3C	Antenna Handbook
MCWP 5-1	Marine Corps Planning Process
J PUB 3-56.1	Tactical Command and Control Planning Guidance and Procedures for Joint Operations (Procedures and Formats)
FM 5-20	Camouflage
FM 5-25	Explosives and Demolition
FM 24-18	Tactical Single-Channel Radio Communications Techniques
FM 24-19	Radio Operators Handbook
FM 34-130	Intelligence Preparation of the Battlefield
FM 44-1	US Army Air Defense Artillery Employment
FM 44-3	US Army Air Defense Artillery Employment, Chaparral/Forward/Vulcan/Stinger
FM 44-8	Combined Arms for Air Defense
FM 44-16	Chaparral/Vulcan/Stinger/Platoon Combat Operations
FM 44-18	Army Air Defense Employment (Stinger)
FM 44-18-1	Stinger Team Operations, 31 Dec 1984
FM 44-31	Tactics, Techniques, and Procedures for Avenger Squad Operations
FM 44-44	Avenger Platoon, Section, and Squad Operations
FM 44-46	MANPADS Platoon, Section, and Team Operations
FM 44-64	SHORAD Battalion and Battery Operations
FM 44-100-2	Air Defense Artillery Reference Handbook
FMFM 0-1	Unit Training Management Guide
FMFM 3-1	Command and Staff Action
FMFM 3-2	Amphibious Training
FMFM 5-60	Control of Aircraft and Missiles
FMFRP 0-1	Unit Training Management Guide
FMFRP 0-1A	How to Conduct Training
TM 4700-15/41	Equipment Repair Procedures Manual
TM 9-1425-433-10	Guided Missile Battery Control Central, Vehicle Mounted Avenger Air Defense Weapon System
TM 9-1425-429-12	Operator's and Organizational Maintenance Manual: Stinger Guided Missile System. Consisting of: Weapon Round Partial Gripstock Trainer Handling Guided Missile Launcher M-60, Interrogator Set AN/PPX-3A, AN/PPX-3B, Interrogator Set Programmer AN/GSX-1A
TM 9-1425-2586-10	Operator's Manual for Chaparral M48A2 Air Defense Guided Missile System (Chaparral Air Defense Guided Missile System). 28 June 1984 (Change 8, February 1990)
TM 11-5820-348-15	Antenna Equip RC-292
TM 11-5820-401-10-2	Operator's Manual: Radio Sets AN/VRC-12, AN/VRC-43 through AN/VRC-49 (used with an intercom system)
TM 11-5820-890-10-1	SINCGARS Ground Combat Net Radio, ICOM

TM 11-5820-890-10-2	Operator's Manual for Radio Sets, AN/PRC-119, AN/VRC-87, AN/VRC-88, AN/VRC-89, AN/VRC-90, AN/VRC-91, AN/VRC-92
TM 11-5820-890-10-4	Operator for Radio Set AN/PRC-119, VRC 87-92
TM 11-5825-291-13	Satellite Signal Navigation Set AN/PSN-11
TM 11-5830-340-12	Operator's and Organizational Maintenance Manual for Intercommunication Set, AN/VIC-1(V)
TM 11-5895-1194-24P-2	Interrogator Set Programmer AN/GSX-1/A
TM 07508A-14	Antenna AS-2259/GR B
TM 07748A-12/1	PRC-104 Radio Set
TM 07749A/07743-12/1A	MRC-138/GRC-193
TM 008487A-12&P/4	Digital Comm Terminal ANPSC-2M
TM 08487A-14/1	Volume I DCT
TM 09480A-12&P/1	AN-UPS-3 Display Unit
TM 09871A-12/1	Guided Missile Battery Control Central Vehicle Mounted AN/TWQ-1
TM 2320-10/6A	Operator's Manual for M998/M1038
TM 10152A-24&P	Organizational and Intermediate Maintenance Instructions including Repair Parts List for Machine Gun, .50 Cal, M3P
TM 10296A-10/1-1	Field Handbook Expeditionary Air Defense System (EADS) Director Unit (DU)
TB 11-5825-291-10-2	Soldiers Guide for the PLGR (Precision Lightweight GPS Receiver)
BR-20278	Contingency Fire Unit Users Manual
BR-19972A	FDU/WDU Users Manual, KL-43C Operators Manual
ACP-125	Allied Communications Publication Communication Instructions Radiotelephone Procedures
CMS-21A	CMS Policy and Procedures for Navy Electronic Key Management System Tiers 2 and 3
NWP 3-01.01	Anti-Air Warfare Manual
N/A	Tactical Alert Defense Radar Set, August 1995
N/A	EADS Software Guide
N/A	Electromagnetic Compatibility Analysis Center (ECAC) Guide
N/A	Falcon View Data Base Admin Guide, April 1992
N/A	AN/PAS-18 Receiver Infrared System Student Guide, April 1994
N/A	Stinger Troop Proficiency Trainer (STPT Instructors Manual, February 1993)
N/A	Tactical Combat Operations System (TCO) Users Guide
N/A	Theater Battle Management Core System (TBMCS) Users Guide

220. LIVE/SIMULATOR EVENT TRAINING FOR LAAD SECT LDR/PLT SGT/OPS CHIEF1. COMBAT CAPABLE STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
Start Section Leader Training			60.00%

2. COMBAT READY STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
SYSTEM TRAINING	7	6.5	3.50%
OPERATIONS	6	28	8.50%
QUALIFICATION	1	24	3.00%
COMBAT READY TOTALS:	14	58.5	15.00%

3. COMBAT QUALIFICATION STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
OPERATIONS	4	75.0	8.00%
SURFACE-TO-AIR WEAPONS TRAINING	1	2	2.00%
QUALIFICATION	2	96	10.00%
COMBAT QUALIFICATION TOTALS:	7	173.0	20.00%

4. FULL COMBAT QUALIFICATION STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
SYSTEMS	2	4	0.75%
OPERATIONS	3	32	2.25%
QUALIFICATION	1	48	2.00%
FULL COMBAT QUALIFICATION TOTALS:	6	84	5.00%

230. LIVE/SIMULATOR EVENT PERFORMANCE REQUIREMENTS

1. General. The majority of the Low Altitude Air Defense syllabi is ground training which requires in-depth integration within the MACCS. Likewise, development of MAGTF training involving extensive integration with the ground combat element is mandatory in the development of a Full Combat Qualified LAAD Sect Ldr/Plt Sgt/Ops Chief.

a. Live Training. Training event condition codes listed as L (live) and L/S (live preferred/simulator optional in this syllabus designate training to be conducted without the aid of simulator devices. Training not conducted in the live training environment shall be replaced with simulation where applicable as indicated in the condition code. Any engagement of a friendly aircraft during an aircraft tracking cycle constitutes failure of that cycle. A failed cycle must be repeated until it is successfully accomplished.

b. Simulator Training. Training event condition codes listed as S (simulator) and S/L (simulator preferred/live optional) in this syllabus designate training to be conducted in the Moving Target Simulator (MTS), Institutional Conduct of Fire Trainer (ICOFT), or using the Stinger Troop Proficiency Trainer (STPT) where applicable. Training not conducted in the MTS shall be replaced with live tracking exercises where applicable as indicated in the condition code. Any engagement of a friendly aircraft during an aircraft tracking cycle constitutes failure of that cycle. A failed cycle must be repeated until it is successfully accomplished.

3. Minimum Performance Time for Syllabus "Write-Off"/Designations. Any LAAD personnel may receive credit for successful completion of any syllabus

requirement (except qualifications) upon either a written, oral, or practical demonstration of proficiency, at the commanding officer's discretion. Completion of 70 percent of any syllabus requirement (except qualifications) may be "written-off" as complete at the discretion of the designated evaluator. Qualifications require a completed performance evaluation, and the designation signed by the commanding officer.

4. Evaluation of Training. Evaluation of those portions of the syllabus that are academic in nature will be conducted by either written/oral examination or a combination of the two means. Operational and system related subjects will be evaluated by practical application means whenever possible. Performance evaluation to qualify for LAAD designations will be conducted per T&R Manual, Administrative, and the standardized evaluation forms provided by the MOS sponsor.

#### 231. COMPONENTS OF A T&R EVENT

1. General. An event contained within a T&R manual is an individual or collective training standard and contains seven or eight components, dependent on the tier in which they are contained:

1/ <u>OPS-XXX</u>	2/ <u>0.5</u>	3/ 4/ <u>T,C,R,E</u>	5/ <u>EQUIP</u>	6/ <u>L/S</u>	<u>(NS)</u>
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Goal. The title of a unit of work that needs to be done in the performance of a Marine's duties. It is a clearly stated performance-oriented action requiring learned skills and knowledge, i.e., Engage a rotary wing aircraft.

Requirement. The condition(s) set for the real-world or combat circumstances in which the tasks are to be performed. They indicate what is provided (equipment, tools, materials, manuals, aids, etc.), environmental constraints or conditions under which the task is performed, and any specific cues or indicators to which the performer must respond. When resources or safety requirements limit the conditions, this should be stated.

Performance Standards. The performance standard indicates the basis for judging the effectiveness of the performance. It consists of a carefully worded statement that identifies the proficiency level expected when the task is performed. It is not guidance, it is inviolate. Performance standards are specified in terms of accuracy, speed, sequencing, quality of performance, adherence to procedural guidelines, etc.

Performance Steps. *Listed for 100-level T&R events only.* Performance steps are the actions or decisions required to fulfill proficiency established by the standard. The major performance steps that are required to perform the task to proficiency are listed in the order of performance. Minor steps are not listed.

Prerequisite. Provides a listing of academic training or other T&R events that must be completed prior to satisfying the task.

Reference. Listing of doctrinal or reference publications that may assist the trainee in satisfying the performance standards, or the trainer in evaluating the effectiveness of task completion.

Ordnance. A listing of ordnance types and quantities required to satisfy the task.

External Syllabus Support. A listing or description of the external support requirements that may be required to satisfy completion of the task. May include range requirements, support aircraft, targets, training devices, or other personnel and equipment.

Notes:

1/ Events are coded per Appendix B of the Administrative T&R Manual.

2/ Projected Event Duration is furnished as a planning tool.

3/ Denotes the applicable Program of Instruction (Basic POI is understood). POI Codes: **T** = transition; **C** = conversion; **R** = refresher.

4/ An "**E**" indicates an Evaluated event.

5/ The equipment or activity sub-category is listed. Equipment and activity codes: **AVG** = Avenger; **COMM** = Communications; **EMPL** = Employment; **GBDL** = Ground Based Data Link; **GUN** = M3P .50 Caliber Machine Gun; **IFF** = Identification Friend or Foe; **NAV** = Navigation; **PLNG** = Planning; **STG** = Stinger; and **SPTE** = Support Equipment.

6/ Condition Code: **L** = live training; **S** = simulator training; **L/S** = live preferred/simulator optional; **S/L** = simulator preferred/live optional; **N** = Night; **NS** = Night Vision Device; Where contained within ( ) denotes optional conditions.

232. COMBAT CAPABLE TRAINING. All Combat Capable training (100-level) will be conducted during initial MOS training.

233. COMBAT READY TRAINING

1. Systems Training (SYS)

a. Purpose. To develop requisite skills and working knowledge relating to the characteristics, capabilities, limitations, and operation of LAAD related systems or equipment which a LAAD Sect Ldr/Plt Sgt/Ops Chief is required to operate and maintain.

b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 206.

c. Team Requirements. Systems training at the 200-level is executed as individual training. Where appropriate, systems training will be executed as collective training at the organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Ready stage as depicted in paragraph 210.

e. Live and Simulator Event Training (7 Events, 6.5 Hours)SYS-2202.0COMML

Goal. Operate and maintain organic communication security keying devices.

Requirement. Operate and maintain organic security keying devices during a practical application exercise using the below listed equipment:

- (1) KYK-13.
- (2) KOI-18.
- (3) KY-99.
- (4) AN/CYZ-10.
- (5) Appropriate radio assets.
- (6) PM materials.

Performance Standards. The Marine will generate a key, store a key, transfer a stored key, operate, perform preventive maintenance, zeroize, and pass secure communications.

Prerequisite. None.

Reference. None.

Ordinance. None.

External Syllabus Support. None.

SYS-2211.0EIFFL

Goal. Program and operate the IFF Belt Pack.

Requirement. Without the aid of the reference, during a practical application exercise, and given an appropriate security keying device with IFF fill, AN/GSX-1, an IFF belt pack, and a mission capable Avenger Weapon System or THT, the Marine will program the IFF Subsystem.

Performance Standards. Utilizing proper procedures, correctly program four days of mode four IFF.

Prerequisite. SYS-220.

Reference. TM 9-1425-429-12, MCRP 3-25.10A, and TM 11-5895-1194-24P-2.

Ordinance. None.

External Syllabus Support. None.

SYS-2221.0COMML

Goal. Install, operate and maintain the AN/PRC-104 and associated equipment.

Requirement. During a practical application exercise, with the aid of a communicator(s), and given an SL-3 complete AN/PRC-104, KY-99, Digital Communications Terminal (DCT), and an AS-2259 antenna, communicate with another station and perform preventive

maintenance on the equipment as prescribed in TM 07748A-12/1 and TM 008487A-12&P/4.

Performance Standards. Utilizing proper operating procedures, pass secure/non-secure voice and digital communications over short and long range antennas. Communicator may assist in the construction of the long range antenna.

Prerequisite. None.

Reference. TM 008487A-12&P/4 and TM 07748A-12/1.

Ordinance. None.

External Syllabus Support. None.

SYS-223      0.5                              COMM                      L

Goal. Operate the KL-43.

Requirement. Given the reference, appropriate keying material, an SL-3 complete KL-43 and associated radios, operate the KL-43.

Performance Standards. The Marine will draft, encrypt, transmit, receive, and decrypt a KL-43 message in accordance with the reference.

Prerequisite. SYS-220 and SYS-222.

Reference. BR-19972A.

Ordinance. None.

External Syllabus Support. None.

SYS-224      0.5                              SPTE                      L

Goal. Install, operate, and maintain the AN/UPS-3 Tactical Defense Alert Radar (TDAR).

Requirement. During a practical application exercise, with the aid of another Marine, and given the reference and an SL-3 complete TDAR, install, operate, and maintain the TDAR.

Performance Standards. The Marine and one assistant will assemble the TDAR within ten minutes. Once assembled, operation and preventive maintenance checks will be conducted in accordance with the reference.

Prerequisite. None.

Reference. TM 09480A-12&P/1.

Ordinance. None.

External Syllabus Support. None.

SYS-225      1.0                              SPTE                      L

Goal. Operate the Gas Compression Unit (GCU) and the Gas Filtration Unit (GFU).





d. Academic Training. Appropriate academic training and lectures for the Combat Ready stage as depicted in paragraph 210.

e. Live and Simulator Event Training (6 Events, 28.0 Hours)

OPS-227

10.0

NAV

L

Goal. Conduct day and night navigation.

Requirement. Given the current GPS, map, compass, and protractor, successfully navigate to designated locations during periods of daylight, darkness, or reduced visibility.

Performance Standards. The Marine must accomplish the following:

- (1) Correctly plot (5) six-digit grid coordinates using a 1:50,000 scale map.
- (2) Find 5 of 5 locations during the day using a map and compass.
- (3) Find 4 of 5 locations during times of darkness or reduced visibility using a map and compass.
- (4) Find 5 of 5 locations during the day using the GPS.
- (5) Find 5 of 5 locations at night using the GPS.

Prerequisite. None.

Reference. MCO P1500.44C and TM 11-5825-291-13.

Ordinance. None.

External Syllabus Support. Appropriate range/training area.

OPS-230

2.0

TRNG

L

Goal. Maintain proficiency in visual aircraft identification, to include instructional skills.

Requirement. Without the aid of reference, and given a visual presentation of at least 50 combat aircraft, the Marine will correctly identify the aircraft provided. Given appropriate visual aids, the Marine will conduct a period of instruction on aircraft identification in accordance with FM 44-80.

Performance Standards. The Marine will successfully identify 100% of U.S. aircraft and 90% of all other (i.e. NATO, Allied, Threat) aircraft presented.

Prerequisite. None.

Reference. FM 44-80.

Ordinance. None.

External Syllabus Support. None.

OPS-231

4.0

PLNG

L

Goal. Conduct a detailed Intelligence Preparation of the Battlefield (IPB).

Requirement. Given a section level Marine Aviation Planning Problem (MAPP), an area of operations, mission, and a threat, perform a detailed IPB.

Performance Standards. Conduct and brief a detailed IPB in accordance with FM 34-130 to include area evaluation, terrain analysis, weather analysis, threat evaluation, threat integration, Air Order of Battle (AOB), Ground Order of Battle (GOB), Electronic Order of Battle (EOB), Reconnaissance Capabilities, and terrorist/unconventional threat. Utilize Requests for Information (RFI), Commanders Critical Information Requirements (CCIR), and supplement specific intelligence requirements needed for the mission.

Prerequisite. None.

Reference. FM 34-130.

Ordinance. None.

External Syllabus Support. None.

OPS-232

2.0

COMM

L

Goal. Construct a field expedient antenna.

Requirement. Given the reference, field expedient materials, a frequency, an SL-3 complete SINCGARS and an AN/PRC-104, and with the aid of a communicator, construct a field expedient antenna for each.

Performance Standards. The Marine will construct a field expedient antenna based upon his radio propagation computation and establish and maintain a communication link with a distant net control station utilizing both the SINCGARS and AN/PRC-104.

Prerequisite. SYS-222.

Reference. FMFMRP 3-34.

Ordinance. None.

External Syllabus Support. None.

OPS-233

1.0

GBDL

L

Goal. Establish and maintain Ground Based Data Link (GBDL) with Variable Message Format (VMF) Link.

Requirement. During practical application, given an SL-3 complete TDAR, RTU's, SINCGARS radios with appropriate fills, establish and maintain GBDL with VMF.

Performance Standards. The Marine will establish and maintain a GBDL network with at least two receiving stations using single channel (SC), frequency hopping (FH) Mode, and a MACCS, joint or coalition sensor.

Prerequisite. SYS-224.

Reference. TM 09480A-12&P/1 and EADS Software Guide.

Ordnance. None.

External Syllabus Support. MACCS, joint, or coalition sensor.

OPS-234      9.0              E              PLNG              L/S

Goal. Plan for the employment of a LAAD unit.

Requirement. Given a tactical scenario, plan for the employment of a LAAD unit in accordance with MCWP 3-25.10.

Performance Standards. The Marine will plan and brief the employment of his section for the following:

- (1) Point defense.
- (2) Surveillance and weapons gap filler.
- (3) Base Defense Zone.
- (4) Defense of a maneuver element.
- (5) Convoy Defense.

The Marine's plan will address the following:

- (1) IPB (Responsiveness to the Threat).
- (2) LAAD capabilities, limitations, and requirements.
- (3) Command/support relationships.
- (4) Air defense priorities.
- (5) Command Post (CP) operations.
- (6) Air defense control measures.
- (7) Rules of engagement.
- (8) Surveillance plan.
- (9) Integration with MACCS.
- (10) Integration with GCE.
- (11) Communications planning.
- (12) GBDL architecture capabilities/limitations.
- (13) Missile re-supply.
- (14) Logistics planning.
- (15) Heliborne operations.
- (16) Night operations.
- (17) Amphibious operations.
- (18) Operational risk management.

Prerequisite. OPS-221 and OPS-223.

Reference. MCWP 3-25.10, MCWP 3-25.11, MCRP 3-40.3C, ACP-125, FM 24-18, FMFM 3-1, and MCO 3500.27.

Ordnance. None.

External Syllabus Support. None.

### 3. Qualification Training (QUAL)

a. Purpose. To qualify as a Combat Ready LAAD Section Leader.

b. General

(1) Administrative Notes. Performance evaluation to qualify for LAAD designations will be conducted per Chapter 6, T&R Manual, Administrative, and the standardized evaluation forms located in Appendix A of this syllabus. Upon successful completion of a Qualification event, the Marine should be

designated by the unit commanding officer and have a letter placed in their MACCS Performance Record stating their qualification.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 206.

c. Team Requirements. Qualification training will be executed as collective training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualified Stage as depicted in paragraph 210.

e. Live and Simulator Event Training (1 Event, 24.0 Hours)

<u>QUAL-280</u>	<u>24.0</u>	<u>R,E</u>	<u>EMPL</u>	<u>L</u>
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Goal. Qualify as a Combat Ready LAAD Section Leader.

Requirement. Given a tactical scenario during a battery exercise the Section Leader will be evaluated.

Performance Standards. Upon completion of the 200 syllabus, the Section Leader must pass an evaluation.

Prerequisite. Completion of the 200-level syllabus.

Reference. None.

Ordinance. None.

External Syllabus Support. None.

## 234. COMBAT QUALIFICATION TRAINING

### 1. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment and operations, in order to effectively execute a tactical mission as a member of a Sect/Plt/Btry/Bn.

#### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 206.

c. Team Requirements. Operations training will be executed as collective training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualified Stage as depicted in paragraph 210.

e. Live and Simulator Event Training (4 Events, 75.0 Hours)

OPS-320      3.0                      E                      PLNG                      L

Goal. Receive and issue an operations order.

Requirement. Given a five paragraph order, warning order, or frag order, prepare and issue an appropriate order to subordinate unit leaders.

Performance Standards. The Marine will prepare and present an operations order which accurately disseminates the information received from a senior commander.

Prerequisite. None.

Reference. MCWP 3-25.10, MCWP 3-25.11, FMFM 3-1, and Unit SOP.

Ordnance. None.

External Syllabus Support. None.

OPS-321      24.0                      E                      PLNG,EMPL                      L

Goal. Employ a LAAD unit in General Support (GS).

Requirement. In a field environment, employ the LAAD unit in accordance with the references.

Performance Standards. The Marine will plan and employ his unit for the following missions:

- (1) Point defense.
- (2) Surveillance and weapons gap filler.

The Marine's plan will address the following as applicable:

- (1) IPB (Responsiveness to the Threat).
- (2) LAAD capabilities, limitations, and requirements.
- (3) Command/support relationships.
- (4) Air defense priorities.
- (5) Command Post (CP) operations.
- (6) Air defense control measures.
- (7) ID criteria.
- (8) Rules of engagement.
- (9) Surveillance plan.
- (10) Integration with MACCS.
- (11) Integration with GCE.
- (12) Communications planning.
- (13) GBDL architecture capabilities/limitations.
- (14) Missile re-supply.
- (15) Logistics planning.
- (16) Heliborne operations.
- (17) Night operations.
- (18) Amphibious operations.
- (19) Operational risk management.

Prerequisite. OPS-320.

Reference. MCWP 3-25.10, MCWP 3-25.11, MCRP 3-40.3C, ACP-125, FM 24-18, FMFM 3-1, MCO 3500.27, and Unit SOP.

Ordnance. None.

External Syllabus Support. None.

OPS-322      24.0              E                      PLNG,EMPL      L

Goal. Employ a LAAD unit in a Base Defense Zone (BDZ).

Requirement. In a field environment, employ the LAAD unit in accordance with the references.

Performance Standards. The Marine will plan and employ his unit for the Base Defense Zone mission.

The Marine's plan will address the following as applicable:

- (1) IPB (Responsiveness to the Threat).
- (2) LAAD capabilities, limitations, and requirements.
- (3) Command/support relationships.
- (4) Air defense priorities.
- (5) Command Post (CP) operations.
- (6) Air defense control measures.
- (7) ID criteria.
- (8) Rules of engagement.
- (9) Surveillance plan.
- (10) Integration with MACCS.
- (11) Integration with GCE.
- (12) Communications planning.
- (13) GBDL architecture capabilities/limitations.
- (14) Missile re-supply.
- (15) Logistics planning.
- (16) Heliborne operations.
- (17) Night operations.
- (18) Amphibious operations.
- (19) Operational risk management.

Prerequisite. OPS-320.

Reference. MCWP 3-25.10, MCRP 3-25.10A, MCRP 3-40.3C, ACP-125, FM 24-18, FMFM 3-1, MCO 3500.27, and Unit SOP.

Ordinance. None.

External Syllabus Support. None.

OPS-323      24.0              E                      PLNG,EMPL      L

Goal. Employ a LAAD unit in Direct Support (DS).

Requirement. In a field environment, employ the LAAD unit in accordance with the references.

Performance Standards. The Marine will plan and employ his unit for the following missions:

- (1) Defense of a maneuver element.
- (2) Convoy defense

The Marine's plan will address the following as applicable:

- (1) IPB (Responsiveness to the Threat).
- (2) LAAD capabilities, limitations, and requirements.
- (3) Command/support relationships.

- (4) Air defense priorities.
- (5) Command Post (CP) operations.
- (6) Air defense control measures.
- (7) ID criteria.
- (8) Rules of engagement.
- (9) Surveillance plan.
- (10) Integration with MACCS.
- (11) Integration with GCE.
- (12) Communications planning.
- (13) GBDL architecture capabilities/limitations.
- (14) Missile re-supply.
- (15) Logistics planning.
- (16) Heliborne operations.
- (17) Night operations.
- (18) Amphibious operations.
- (19) Operational risk management.

Prerequisite. OPS-320.

Reference. MCWP 3-25.10, MCRP 3-25.10A, MCRP 3-40.3C, ACP-125, FM 24-18, FMFM 3-1, MCO 3500.27, and Unit SOP.

Ordinance. None.

External Syllabus Support. None.

## 2. Surface-to-Air Weapons Training (SAW)

a. Purpose. To maintain knowledge and proficiency of LAAD engagement techniques against live aircraft and drones.

### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 206.

c. Team Requirements. None for SNCOs and officers.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualification as depicted in paragraph 210.

e. Live and Simulator Event Training (2 Events, 2.5 Hours)

<u>SAW-360</u>	<u>2.0</u>	<u>R,E</u>	<u>STG/AVGS</u>
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Goal. Conduct multiple target engagements with the Avenger and MANPAD.

Requirement. Given a tactical scenario that includes enemy and friendly AOB, ROE, and air defense control measures, engage multiple fixed and rotary wing aircraft in the MTS and ICOFT. Targets will fly mixed profiles and employ infrared countermeasures (IRCM). Engagements will be conducted during daylight and darkness or reduced visibility.

Performance Standards. The Marine will demonstrate proper target selection and fire distribution techniques. The Marine must properly identify target in accordance with established rules of engagement. The Marine must demonstrate proper detection, acquisition, ranging, super elevation, and firing techniques in accordance with firing doctrine guidance. Actions are to be evaluated using the MTS and ICOFT. A total of 10 multiple-target scenarios are required. Engagement procedures for cold weather and NBC operations will be utilized in at least two scenarios.

Prerequisite. None.

Reference. FM 44-18-1, TM 9-1425-429-12, and TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

### 3. Qualification Training (QUAL)

a. Purpose. To qualify as a Combat Qualified LAAD Section Leader.

b. General

(1) Administrative Notes. Performance evaluation to qualify for LAAD designations will be conducted per Chapter 6, T&R Manual, Administrative, and the standardized evaluation forms located in Appendix A of this syllabus. Upon successful completion of a Qualification event, the Marine should be designated by the unit commanding officer and have a letter placed in their MACCS Performance Record stating their qualification.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 206.

c. Team Requirements. Qualification training will be executed as collective training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualified Stage as depicted in paragraph 210.

e. Live and Simulator Event Training (2 Events, 96.0 Hours)

<u>QUAL-330</u>	<u>48.0</u>	<u>E</u>	<u>EMPL</u>	<u>L</u>
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Goal. Qualify as a Combat Qualified LAAD Section Leader.

Requirement. Given a tactical scenario, and during a formal or informal MCCRE, the Section Leader will be evaluated.

Performance Standards. Upon completion of the 200- and 300-level syllabus, the Section Leader must pass a MCCRE.

Prerequisite. Completion of the 200- and 300-level syllabus.

Reference. None.

Ordinance. None.

External Syllabus Support. None.



QUAL-331      48.0              R,E              EMPL              L

Goal. Qualify as a Combat Qualified LAAD Section.

Requirement. Given a formal or informal MCCRE qualify as a Combat Qualified LAAD Section.

Performance Standards. Upon completion of the 200 and 300 syllabus, the Section must pass a MCCRE.

Prerequisite. Completion of the 200- and 300-level syllabus plus the prerequisites listed in paragraph 204.2.b.

Reference. Unit SOP.

Ordinance. None.

External Syllabus Support. None.

## 235. FULL COMBAT QUALIFICATION TRAINING

### 1. Systems Training (SYS)

a. Purpose. To develop requisite skills and working knowledge relating to the characteristics, capabilities, limitations, and operation of LAAD related systems or equipment which LAAD Sect Ldr/Plt Sgt/ Ops Chiefs are required to operate and maintain.

#### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 206.

c. Team Requirements. Systems training will be executed as collective training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Full Combat Qualified Stage as depicted in paragraph 210.

#### e. Live and Simulator Event Training (2 Events, 4.0 Hours)

SYS-420      1.0                      COMM              L

Goal. Install, operate and maintain the AN/MRC-138.

Requirement. During a practical application exercise the Marine, given an SL-3 complete AN/MRC-138 with ancillary keying devices, will install, operate and maintain the AN/MRC-138 with the aid of communicator. Communicate with another station and perform preventive maintenance on aforementioned equipment as prescribed in the references.

Performance Standards. In accordance with the references, the Marine will establish communications with another station and pass secure/non-secure voice communications.

Prerequisite. None.

Reference. TM 07749A/07743-12/1A, TM 07508A-14, and TM 11-5820-348-15.

Ordinance. None.

External Syllabus Support. None.

SYS-421      3.0                                      PLNG                      L

Goal. Use aviation mission planning tool products.

Requirement. During a practical application exercise the Marine, given a mission, will conduct planning utilizing at least one of the following aviation mission planning tools if available:

- (1) Falcon View.
- (2) C2PC.
- (3) TCO.
- (4) TBMCS.
- (5) SPEED.

Performance Standards. Use and incorporate Aviation Planning tools into mission planning.

Prerequisite. None.

Reference. Falcon View, Data Base Admin Guide Apr 92, Electromagnetic Compatibility Analysis Center (ECAC) Guide, MCO 4400.182, TCO Users Guide, and TBMCS Users Guide.

Ordinance. None.

External Syllabus Support. Tactical Aircrew Mission Falcon View, Data Base Admin Guide Apr 92, C2PC, MCO 4400.182, TCO Users Guide, and TBMCS Users Guide.

## 2. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment and operations, in order to effectively execute a tactical mission as a member of a SECT/PLT/BTRY/BN.

### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 206.

c. Team Requirements. Operations training will be executed as individual training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Full Combat Qualified Stage as depicted in paragraph 210.

e. Live and Simulator Event Training (3 Events, 32.0 Hours)



Requirement. Given appropriate Marine Corps orders, and current readiness information, plan and implement a unit level training program.

Performance Standards. The Marine will develop a training program based on the unit's core competencies per the reference.

Prerequisite. None.

Reference. FMFM 0-1, FMFRP 0-1, FMFRP 0-1A, MCWP 3-25.10, and MCWP 3-25.11.

Ordnance. None.

External Syllabus Support. None.

### 3. Qualification Training (QUAL)

a. Purpose. To qualify as a Full Combat Qualified Platoon Sergeant/Operations Chief.

#### b. General

(1) Administrative Notes. Performance evaluation to qualify for LAAD designations will be conducted per Chapter 6, T&R Manual, Administrative, and the standardized evaluation forms located in Appendix A of this syllabus. Upon successful completion of a Qualification event, the Marine should be designated by the unit commanding officer and have a letter placed in their MACCS Performance Record stating their qualification.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 206.

c. Team Requirements. Qualification training will be executed as collective training at the appropriate organizational level as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Full Combat Qualified Stage as depicted in paragraph 210.

#### e. Live and Simulator Event Training (1 Event, 48.0 Hours)

<u>QUAL-440</u>	<u>48.0</u>	<u>E</u>	<u>EMPL</u>	<u>L</u>
-----------------	-------------	----------	-------------	----------

Goal. Qualify as a LAAD Platoon Sergeant.

Requirement. Given a tactical scenario, and during a formal or informal MCCRE, the Platoon Sergeant will be evaluated.

Performance Standards. Upon the completion of the Combat Qualification stage of training, the Platoon Sergeant must pass a MCCRE.

Prerequisite. QUAL-330.

Reference. None.

Ordnance. None.

External Syllabus Support. None.

240. SPECIAL TRAINING REQUIREMENTS1. Instructor Training Events

a. Purpose. To train personnel to conduct LAAD operations under various environmental conditions and during special operations.

b. Live Training (1 Event, 250 Hours)

QUAL-510      250.0      R,E      EMPL      L

Goal. Attain designation as a Marine Enlisted Weapons and Tactics Instructor (MEWTI).

Requirement. Attend the enlisted course of instruction at MAWTS-1.

Performance Standards. Successfully complete the POI for the enlisted course at MAWTS-1.

Prerequisite. QUAL-280, OPS-320 and 1 year in a section leader billet or above.

Reference. None.

Ordinance. None.

External Syllabus Support. None.

260. EXPENDABLE ORDNANCE REQUIREMENTS. None.

270. PROFICIENCY INTERVALS. Table 2-6, 2-7, and 2-8 contain the proficiency intervals for the Combat Readiness, Combat Qualification, and Full Combat Qualification training levels.

Table 2-6.--LAAD Section Leader, Platoon Sergeant, and Operations Chief  
Proficiency Interval for the Combat Readiness Training Level.

EVENT	CODE	HOURS	PROFICIENCY INTERVAL	CRP	T	C	R	E	CONDITIONS & REMARKS
SYS	220	2.0	12	0.5					L
	221	1.0	12	0.5				X	L
	222	1.0	12	0.5					L
	223	0.5	12	0.5					L
	224	0.5	12	0.5					L
	225	1.0	12	0.5					L
	226	0.5	12	0.5					S
OPS	227	10.0	12	1.0					
	230	2.0	3	1.5					L
	231	4.0	12	1.5					L
	232	2.0	12	1.5					L
	233	1.0	12	1.5					L
	234	9.0	12	1.5				X	L/S
QUAL	280	24.0	18	3.0			X	X	L

Table 2-7.--LAAD Section Leader, Platoon Sergeant, and Operations Chief  
Proficiency Interval for the Combat Qualification Training  
Level.

EVENT	CODE	HOURS	PROFICIENCY INTERVAL	CRP	T	C	R	E	CONDITIONS & REMARKS
OPS	320	3	12	2.0				X	L
	321	24	12	2.0				X	L
	322	24	12	2.0					
	323	24	12	2.0					
SAW	360	2	12	2.0			X	X	S
QUAL	330	48	18	5.0				X	L
	331	48	18	5.0			X	X	L

Table 2-8.--LAAD Section Leader, Platoon Sergeant, and Operations Chief  
Proficiency Interval for the Full Combat Qualification Training  
Level.

EVENT	CODE	HOURS	PROFICIENCY INTERVAL	CRP	T	C	R	E	CONDITIONS & REMARKS
SYS	420	1	24	.25					L
	421	3	24	0.5					L
OPS	430	12	24	0.75					L
	431	12	24	1.0					L
	432	8	24	0.5					L
	441	250	N/A	2				X	L

280. EVENT UPDATE CHAINING. Table 2-9 contains the event update chaining for the LAAD Section Leader, Platoon Sergeant, and Operations Chief.

Table 2-9.--LAAD Section Leader, Platoon Sergeant, and Operations Chief Combat Ready and Combat Qualification Training Event Update Chaining.

EVENTS	EVENTS UPDATED
220	
221	
222	
223	
224	
225	
226	
227	
230	
231	
232	222
233	224
234	231
280	220, 221, 222, 224, 225, 226, 230, 231, 232, 233, 234
320	
321	231, 234, 320
322	231, 234, 320
323	231, 234, 320
360	
330	280
331	330
420	
421	
430	231, 234
431	231, 234
432	
440	
510	220, 221, 222, 223, 224, 231, 232, 233, 234, 320, 321, 420, 421, 432

# T&R MANUAL, LAAD

## CHAPTER 3

### LOW ALTITUDE AIR DEFENSE (LAAD) GUNNER (AVENGER/MANPAD) (MOS 7212)

	<u>PARAGRAPH</u>	<u>PAGE</u>
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3-1	LAAD GUNNER (AVENGER/MANPADS) TRAINING PROGRESSION MODEL. . . . .	3-10
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CHAPTER 3

LOW ALTITUDE AIR DEFENSE (LAAD) GUNNER (AVENGER/MANPAD)  
(MOS 7212)

300. INTRODUCTION

1. The purpose of the Marine Aviation Training and Readiness (T&R) program is to provide the commander with standardized programs of instruction for all aviation personnel. The goal is to develop unit warfighting capabilities, not to measure the proficiency of individuals. Syllabi are based on specific performance standards designed to ensure proficiency in core competencies. An effective T&R program is the first step in providing the Marine Air Ground Task Force (MAGTF) Commander with an Aviation Combat Element (ACE) capable of accomplishing any and all of its stated missions. The T&R program provides the fundamental tools for commanders to build and maintain unit combat readiness. Using these tools, unit training managers can construct and execute an effective training plan which supports the unit's mission essential tasks.

2. Unit training management is the application of the Marine Corps Training Principles and the Systems Approach to Training to satisfy the training requirements of commanders at all levels in order to accomplish their wartime mission. Guidance concerning unit training management and the process for establishing effective unit training management programs are contained in Marine Corps Reference Publication (MCRP) 3-0A, Unit Training Management Guide, and formed the basis for the development of this T&R Manual. Familiarity with MCRP 3-0A will enhance your understanding of the Systems Approach to Training used in T&R development and Marine Corps Unit Training Management principles.

3. To maintain congruity in aviation and ground T&R programs, CG TECOM (C4610) is coordinating an update to the aviation unit evaluation mechanism. Efforts are underway to incorporate Collective Training Standards (CTS) into aviation T&R manuals. The goal of this effort is to replace MCCRES Mission Performance Standards (MPS) with T&R CTS and utilize the T&R as the unit evaluation mechanism. Like MPS, CTS are criteria that specify mission and functional area unit proficiency standards for combat, combat support, and combat service support units.

4. The effort to replace MCCRES MPS with T&R manual CTS is in the development phase. The concept is to create separate unit chapters in all aviation T&R manuals which contain unit CTS in the form of unit events. CTS will be derived and implemented into T&R manuals using existing unit MCCRES MPS as a baseline. Unit evaluation will be standardized in T&R manuals, not in a separate document. CG TECOM (C4610) plans to cancel unit MCCRES orders as respective unit CTS chapters are approved. Until unit T&R CTS are formally approved, MCCRES shall be utilized as the aviation unit evaluation standard.

301. CORE COMPETENCIES/SKILLS

1. Core competency serves as the foundation of the T&R program. Core competencies are those core capabilities and skills which support the Mission Essential Task List (METL) derived from MCWP 3-2, Aviation Operations, and Organization and Function of Marine Aviation and T/O mission statements, which are realistically expected to be assigned in combat. Core competencies for the LAAD Bn are listed in paragraph 301.3.

2. Mission. The mission of the LAAD Bn is to provide close in, low altitude surface-to-air weapons fires in defense of the MAGTF. LAAD Bns defend forward

combat areas, maneuver forces, vital areas, installations, and/or units engaged in special or independent operations.

### 3. Mission Essential Task List

- a. Command and control the battalion.
- b. Conduct direct support missions.
- c. Conduct general support missions.
- d. Conduct combat operations in a NBC environment.
- e. Plan and coordinate requirements for C4I2 integration within the MAGTF.
- f. Conduct amphibious/expeditionary operations to include the capability to phase control ashore.
- g. Provide 24 hour air defense for special tactical situations and task organizations.

### 4. Battalion Core Capability

a. A core capable LAAD Bn is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 90% equipment/supply readiness and reporting status and 70% T/O on hand in all MOS's. If less than 70% T/O, core capability will be degraded by a like percent. The extent to which a core capable battalion is able to surge beyond its core capability is situation dependent.

b. A section is the smallest employable LAAD element. A core-capable battalion is able to employ 11 sections of combat capable Avenger/MANPAD teams. A LAAD section is comprised of 5 Stinger teams (any combination of Avenger/MANPAD - 2 Marines per team), 2 communicators, and 1 section leader. The typical Avenger section deploys with 5 Avengers. Each Avenger weapon system is equipped with a Forward Looking Infrared (FLIR), Laser Range Finder (LRF), 8 ready Stinger missiles, and an M3P .50 cal machine gun with 285 rounds. This provides 40 Stinger missiles and 1425 .50 cal rounds per Avenger section. The typical MANPAD section deploys with 30 Stinger missiles and 5 thermal imaging sights (AN/PAS-18), providing limited night capability.

c. A core capable section can provide air defense for designated air defense priorities relative to the scope and size of each site (FARP, BDZ and MAGTF maneuver elements). Dependent on the supported MAGTF, Joint, or Coalition operation, appropriate command and control nodes will be employed.

## 302. SUMMARY/INDEX OF LIVE/SIMULATED EVENTS

1. Combat Capable Stage. This stage is accomplished by the Marine Corps Detachment, USAADC. Table 3-1 lists the events completed during the POI.

Table 3-1.--Combat Capable Training List.

EVENT	GOAL	PAGE
FAM-100	Demonstrate knowledge of the Low Altitude Air Defense (LAAD) Battalion.	3-17
SYS-100	Drive an M998 series vehicle.	3-18
SYS-101	Perform preventive maintenance on the HMMWV.	3-19

EVENT	GOAL	PAGE
SYS-102	Convert a Stinger missile round to a weapon round.	3-19
SYS-103	List and describe the capabilities and limitations of the Stinger missile (Basic/RMP).	3-20
SYS-104	Inspect a Stinger weapon round.	3-20
SYS-105	Perform hangfire, misfire, and dud emergency procedures for the Stinger missile.	3-21
SYS-106	State the emergency destruction procedures for the Stinger missile and all ancillary team equipment.	3-22
SYS-107	March order and emplace the MANPAD HMMWV.	3-22
SYS-108	Operate the SINCGARS radio.	3-23
SYS-109	State proper handling of CMS materials.	3-23
SYS-110	Operate Intercommunication Set AN/VIC-1.	3-24
SYS-111	Operate the AN/PSN-11 Precision Lightweight Global Positioning System Receiver (PLGR).	3-24
SYS-112	Operate the Remote Terminal Unit (RTU).	3-25
SYS-113	Load and unload Stinger missiles from the Avenger.	3-25
SYS-114	Mount and remove M3P machine gun from the Avenger.	3-26
SYS-115	Boresight and align the M3P machine gun and optical sight.	3-27
SYS-116	Set headspace and timing on the M3P machine gun.	3-28
SYS-117	Load and unload the M3P machine gun.	3-28
SYS-118	Emplace the Avenger.	3-29
SYS-119	March order the Avenger.	3-29
SYS-120	Establish a Ground Based Data Link (GBDL)	3-30
SYS-121	Perform emergency procedures for hangfire/misfire (Avenger).	3-30
SYS-122	Perform immediate action on the M3P machine gun.	3-31
SYS-123	Troubleshoot the Avenger and M3P machine gun.	3-31
SYS-124	Perform operator troubleshooting on the SINCGARS.	3-32
SYS-125	Perform operator maintenance on the M3P machine gun.	3-33
SYS-126	Perform preventive maintenance checks and services (PMCS) on the Avenger.	3-33
OPS-100	Establish a MANPAD team position.	3-34
OPS-101	Visually identify aircraft.	3-35
SAW-100	Engage an aircraft with the Stinger missile (MANPAD).	3-36
SAW-101	Engage an aircraft with the Avenger.	3-36
SAW-102	Engage aerial and/or ground targets with the M3P machine gun.	3-37
SAW-103	Engage an aerial target with a Stinger missile (MANPAD or Avenger).	3-37
QUAL-100	Qualify as a Combat Capable LAAD Gunner.	3-39

2. Combat Ready Stage. Table 3-2 contains a listing of the Combat Readiness training events and associated page numbers.

Table 3-2.--Combat Readiness Training List.

EVENT	GOAL	PAGE
SYS-200	March order the Avenger.	3-39
SYS-201	Load and unload the Avenger.	3-40
SYS-202	Install, operate, and maintain the M3P machine gun.	3-40
SYS-203	Emplace the Avenger.	3-41
SYS-204	Install, operate, and maintain the SINCGARS radio.	3-41
SYS-206	Handle CMS software.	3-42
SYS-207	Establish Ground Based Data Link (GBDL).	3-42
SYS-208	Operate the Wide Angle Stinger Pointer (AN/PAS-18).	3-42
SYS-209	Destroy LAAD equipment to prevent enemy use.	3-43
OPS-210	Conduct day and night navigation.	3-43
OPS-211	Visually identify aircraft.	3-44
OPS-212	Use proper communications procedures.	3-44
OPS-213	Apply air defense control measures.	3-45
OPS-214	Receive an operations order.	3-45
SAW-220	Engage aircraft with the Stinger missile system (MANPAD).	3-46
SAW-221	Fire the Stinger Launch Simulator (STLS).	3-46
SAW-222	Engage aircraft with the Avenger weapon system.	3-47
SAW-223	Engage aircraft with the M3P machine gun.	3-47
QUAL-230	Qualify as a Combat Ready LAAD Gunner/Driver.	3-48

3. Combat Qualification Stage. Table 3-3 contains a listing of the Combat Qualification training events and associated page numbers.

Table 3-3.--Combat Qualification Training List.

EVENT	GOAL	PAGE
OPS-300	Receive an operations order.	3-49
OPS-301	Conduct LAAD team employment planning.	3-49
OPS-302	Conduct a tactical team mount-out.	3-50
OPS-303	Establish a LAAD team position.	3-50
OPS-304	Manual crosstell target information.	3-50
SAW-310	Conduct multiple target engagements with the Stinger missile system (MANPAD).	3-51
SAW-311	Conduct multiple target engagements with the Avenger weapon system.	3-52
SAW-312	Engage an aerial target with a Stinger missile (MANPAD or Avenger).	3-52
SAW-313	Engage aerial targets with the M3P.	3-53
QUAL-320	Qualify as a Combat Qualified LAAD Team Leader.	3-53
QUAL-321	Qualify as a LAAD team.	3-54

4. Full Combat Qualification Stage. Table 3-4 contains a listing of the Full Combat Qualification training events and associated page numbers.

Table 3-4.--Full Combat Qualification Training List.

EVENT	GOAL	PAGE
SYS-400	Install, operate, and maintain the AN/UPS-3 Tactical Defense Alert Radar (TDAR).	3-54
OPS-410	Plan for the employment of small arms in an air defense role.	3-55
OPS-411	Conduct shipboard Stinger team operations.	3-56
SAW-420	Conduct shipboard firing of the Stinger Launch Simulator.	3-56
QUAL-430	Qualify as a Full Combat Qualified LAAD Team Leader.	3-57

5. Operator Core Skills. Core skills are depicted in the following matrix (Table 3-5) and directly support the METL for each Unit. Core skills shall be a determining factor in developing T&R training requirements. Core Plus skills and training requirements must receive appropriate prioritization and emphasis based on the training need, and the likelihood of those types of missions being assigned during operations.

Table 3-5.--Core and Core Plus Skills Matrix.

CORE SKILLS					CORE PLUS SKILLS			
METL	SYS	OPS	SAW	QUAL	SYS	OPS	SAW	QUAL
<b>A</b>	204	212		230	400			
	205	214		320				
	206	300		321				
	207	304						
<b>B</b>	200	200	220	230		410	411	
	201	201	221	320				
	202	203	222	321				
	203	204	223					
	208	310	310					
	209	311	311					
	300	312	312					
	301	313	313					
	302							
<b>C</b>	200	200	220	230			411	
	201	201	221	320				
	202	203	222	321				
	203	204	223					
	208	311	310					
	209	312	311					
	300	313	312					
	301		313					
	302							
<b>D</b>	200	200	220	230			411	
	201	201	221	320				
	202	203	223	321				
	203	311	224					
	208	312	311					
	209	313	312					
	300		313					
	301							
	302							
<b>E</b>					401			
<b>F</b>	200	210	220	220			411	430
	201	211	221	320				
	202	213	222	321				
	203	214	223					
	208	301	310					
	209	302	311					
	300	303	312					
	301		313					
	302							

CORE SKILLS					CORE PLUS SKILLS			
METL	SYS	OPS	SAW	QUAL	SYS	OPS	SAW	QUAL
G	200	210	220	230			411	430
	201	211	221	320				
	202	213	222	321				
	203	214	223					
	208	301	310					
	209	302	311					
	300	303	312					
	301		313					
	302							

### 303. UNIT TRAINING POLICIES

1. The unit's training program emphasizes qualifications and the overall combat readiness of the unit. Individual training serves as the building block for overall unit readiness. However, unit training will never be compromised for the training of a select, few individuals. Battalion and battery commanding officers will ensure that this training philosophy is implemented. Unit training must predominate, and battalions must tailor their training plans to ensure unit combat readiness.

2. The training of Marines to perform as an integral aviation unit in combat lies at the heart of the T&R program. Unit readiness and individual readiness are directly related. Individual training and the mastery of individual core skills serve as the building blocks for unit combat readiness. A Marine's ability to perform those critical skills required in combat is essential.

3. The mission performance standards for Marine aviation units are published under MCCRES or appropriate Unit T&R. MCCRES or Unit T&R standards shall form the basis for standards defined within the respective individual T&R. Commanders shall ensure that all tactical training is conducted to a MCCRES/Unit T&R standard. MCCRES or Unit T&R is the unit training standard, and all syllabus events shall be tailored to meet those requirements. Commanders at all levels are responsible for effective aviation training. The conduct of training in a professional manner consistent with Marine Corps standards cannot be overemphasized.

4. Commanders must be cognizant of the numerous factors affecting unit training on a daily basis. Factors that all commanders must address include, but are not limited to:

a. Efficiency. Time and resources expended are measurements for training efficiency. Commanders must ensure that all training increases combat readiness. Unit personnel shall thoroughly plan and effectively execute training to maximize the return on their time and effort.

b. Individual Differences. Commanders must recognize the differences inherent in each individual and should mold flexible training programs to accommodate those differences.

c. Decentralization of Training. The lowest echelon possible shall be responsible for conducting training. Each senior level of command must monitor subordinate commands to ensure safe and efficient training requirements.

5. Commanders shall provide personnel the opportunities to attend formal and operational level courses of instruction as required by this Manual. Attendance at all formal courses must enhance the warfighting capabilities of the unit.

6. Risk Management. Operational Risk Management (ORM) is a process to aid commanders in accomplishing their missions while protecting the force.

Commanders, leaders, maintainers, and planners will integrate risk assessment in the decision making process and implement hazard controls to eliminate risk or reduce it to an acceptable level.

7. MACCS Integrated System Training. All elements of the MACCS shall maintain the capability to effectively function as part of an integrated airspace command and control system. Large exercises may not always offer sufficient training opportunity for all crew members, and in many cases do not offer sufficient latitude to refine capability. The MACCS should conduct MACCS Integrated System Training Exercises (MISTEXs) on a regular basis to qualify units and personnel per their respective T&R syllabus. MISTEXs should focus on the establishment of necessary communications and datalinks between MACCS agencies, and incorporate sufficient simulation and MSEL items to exercise and analyze system integration, crew coordination, and critical information flow wherever possible. Tactical Digital Information Link capable agencies should conduct frequent "Link" training exercises to maintain proficiency.

8. Surface-to-Air Missile Training and .50 Caliber Training. Subject to the availability of missiles and targets, all 7212's assigned to an active battalion in the operating forces should fire at least one Stinger missile (FIM-92A/C/D) during a three year period. In addition, each 7212 will fire 285 rounds of .50 caliber ammunition from the M3P machine gun annually. Commanders shall ensure those members participating in live missile firing exercises have completed appropriate T&R prerequisites as outlined in the applicable syllabus. All missile and .50 caliber firings should be conducted under conditions which closely simulate actual conditions expected to be encountered in the tactical environment (within applicable safety and range constraints), and include the participation of other elements of the MACCS whenever possible.

#### 304. LAAD GUNNER TRAINING PROGRESSION PHILOSOPHY

1. Successful combat units train as they intend to fight and fight as they are trained. The key to successful training for the LAAD Bn lies in raising the quality of an individual's LAAD MOS training. More importantly, however, is the goal of improving the training of the tactical units that make up the core combat elements of the battalion. Individual training is the source of a Marine's trust and confidence in the Corps. Small unit skills, or collective skills are the foundation on which unit effectiveness is built.

2. The intent of this document is to develop the core warfighting capability of LAAD gunners and team leaders. All LAAD gunner/team leader training will be based on the individual and collective tasks in this document. LAAD gunners and team leaders will strive to complete all 200-level gunner tasks and 300-level Team Leader tasks. Regardless of their billet, each Marine will perform all aspects of a task.

a. Events contained within the Combat Ready (200-level) stage of training are individual tasks to be performed by all MOS 7212 Marines in the LAAD Bn.

b. Collective tasks at the Combat Qualification (300-level) stage of training will be performed as an Avenger or MANPAD team. If successfully completed, each team member will receive Combat Readiness Percentage (CRP) credit. If team integrity is broken for any reason, the 300-level collective tasks must be repeated. A breakup of the team does not require a re-fly of any 200- or 300-level individual tasks chained to a 300-level collective training event, nor does it result in the loss of an individual's qualification. QUAL-301 must be accomplished for a specific team to attain Combat Qualification.



3. Marines receive basic MOS qualification and designation upon graduation from the Stinger Gunner/Avenger Crewmember Course conducted by the Marine Corps Detachment at Ft. Bliss, TX. Additional certification as a Combat Qualified LAAD Team Leader is contingent upon successful completion of the appropriate 300- and 400-level T&R tasks contained within the syllabus, and any of their prerequisites.

### 305. TRAINING PROGRESSION MODEL FOR LAAD GUNNER

1. The Training Progression Model for the LAAD gunner is depicted in figure 3-1.

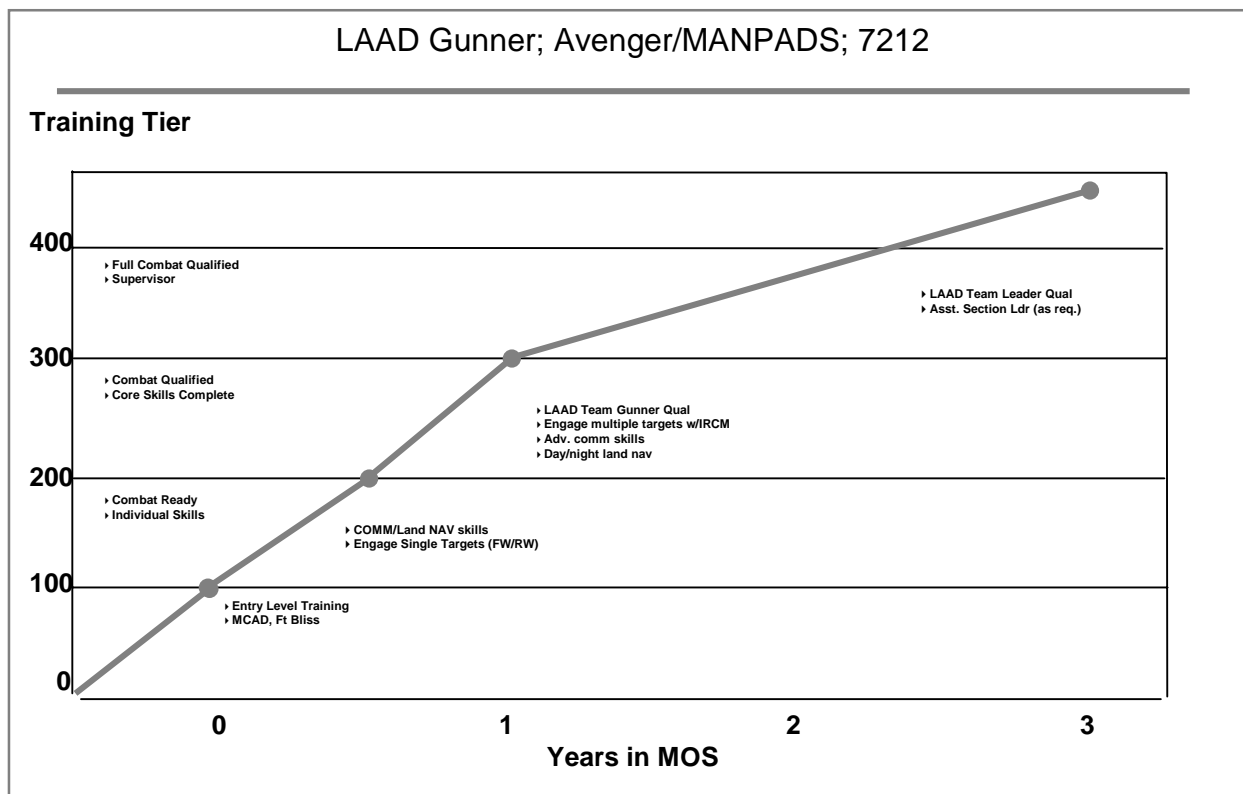


Figure 3-1.--LAAD Gunner (AVENGER/MANPADS) Training Progression Model.

2. This model depicts the logical progression of qualifications within a unit. The base of each model contains those qualifications an individual reports to the unit with (accession qualifications) after completion of the MOS-qualifying school. The highest tier of the progression model will contain those qualifications held by only the most experienced personnel within a unit.

3. The first tier (Combat Capable) will, in most cases, be accomplished at the completion of initial MOS skills training. Upon successful completion of the Combat Capable tier, unit personnel move to the Combat Ready tier.

4. The second tier (Combat Ready) will take the individual who has completed his initial MOS skills training and make him proficient in core competencies. With successful completion of the Combat Ready tier, unit personnel move to the Combat Qualified tier.

5. The third tier (Combat Qualified) will be that portion of the model that produces combat leaders. The personnel that are being trained in the Combat

Qualified tier are those Marines a commanding officer deems capable of directing the actions of subordinates during wartime scenarios.

6. The fourth and final tier (Full Combat Qualified) will contain special skills and qualifications. Full Combat Qualified tier personnel are the most experienced personnel within a unit. They are expected to display the maturity and tactical acumen commensurate with this status and assist the commanding officer with oversight of the unit training program.

7. The unit's training progression model provides training officers with a valuable tool to develop training plans. With a clear progression of qualifications delineated and an emphasis on the qualification of Combat Capable and Combat Ready personnel, training officers have the ability to produce viable training plans. Units will use the model as a point of departure to generate weekly, monthly, quarterly, and annual training plans.

### 306. PROGRAMS OF INSTRUCTION (POI) FOR LAAD GUNNER

#### 1. Basic LAAD Gunner

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-16	Combat Capable Training	MCD, USAADSCH
17-42	Combat Ready Training	LAAD Bn
43-68	Combat Qualification Training	LAAD Bn
68-WC	Full Combat Qualification Training	LAAD Bn

### 307. SPECIAL DESIGNATIONS

1. LAAD Gunner/Team Leader Qualifications. A LAAD Gunner/Team Leader is qualified when he has completed the required events of the Combat Ready and Combat Qualification phases of the appropriate T&R syllabus and is certified by a Combat Qualified LAAD Platoon Commander and designated by the commanding officer or unit Weapons and Tactics Instructor.

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
12	LAAD Gunner	LAAD Bn
20	LAAD Team Leader	LAAD Bn

### 310. GROUND/ACADEMIC TRAINING

1. Academic training shall be conducted for each phase/stage of the syllabus. Commanders are strongly encouraged to incorporate the lectures in table 3-5 into their training plans. Where indicated, standardized academic training materials exist and may be obtained from the activity listed as the sponsor.

Table 3-6.--Required T&R Lectures.

<b>Lecture Code</b>	<b>Lecture Title</b>	<b>Sponsor</b>
	<b>200-Level: Combat Ready Training</b>	
A-01*	MAGTF Organization	MCCES
A-02*	MACCS Organization	MCCES

Lecture Code	Lecture Title	Sponsor
A-03*	The Six Functions of Marine Aviation	MAWTS-1
A-04*	Control of Aircraft & Missiles	MAWTS-1
A-05*	Offensive Air Support	MAWTS-1
A-06*	Assault Support	MAWTS-1
A-07*	Electronic Warfare	MAWTS-1
A-08*	Aerial Reconnaissance	MAWTS-1
A-08*	Anti-Air Warfare	MAWTS-1
A-12*	Local AOR Contingencies & OP PLANS	Local MACG
A-13*	ROE Overview	Local MACG
A-17*	Manual Crosstell Procedures	USAADASCH, MARCORDET
A-18*	Encryption & Authentication Procedures	MCCES
A-19*	COMSEC & Crypto Handling	MCCES

	300-Level: Combat Qualified Training	
B-01*	Missile and UAV Threat to the MAGTF	MAWTS-1
B-02*	Fixed Wing Threat to the MAGTF	MAWTS-1
B-03*	Rotary Wing Threat to the MAGTF	MAWTS-1
B-04*	REC Threat	MAWTS-1
B-05*	Armor Threat to the MAGTF	MAWTS-1
B-06*	AOR Specific Threat & OP PLANS	Local MACG
B-07*	MACCS Agencies	MAWTS-1
B-08*	TACC	MAWTS-1
B-09*	TAOC	MAWTS-1
B-10*	DASC	MAWTS-1
B-11*	ATC Detachment	MAWTS-1
B-12*	LAAD Bn	MAWTS-1
B-13*	MWCS	MAWTS-1

(\*) The lecture code is standardized throughout all MACCS related syllabi, and is used to link the Aviation Training and Readiness Information Management System (ATRIMS) software to a specific T&R event within this syllabus. Lecture codes may not be listed sequentially.

2. External academic courses of instruction required to complete the syllabus are listed below:

COURSE	ACTIVITY
None	N/A

### 311. TRAINING REFERENCES

1. The following training references shall be utilized to ensure safe and standardized training procedures, performance steps, grading criteria, and equipment operation:

MCDP 6	Command & Control
MCO P1500.44C	Battle Skills Training/Essential Subjects Handbook
MCO P4790.7	Marine Corps Integrated Maintenance Management System (MIMMS) Field Procedures Manual
MCRP 3-0A	Unit Training Management
MCRP 3-0B	How to Conduct Training
MCWP 3-15.1	Machine Guns and Machine Gun Gunnery
MCWP 3-22	Anti-Air Warfare

MCWP 3-25.10	Employment of Low Altitude Air Defense Battalion
MCWP 3-25.11	Low Altitude Air Defense Gunner Handbook
MCWP 3-40.3B	Radio Operators Handbook
MCRP 3-25.10A	Low Altitude Air Defense Gunner Handbook
FM 5-20	Camouflage
FM 5-25	Explosives and Demolition
FM 21-305	Manual for the Wheeled Vehicle Driver
FM 24-18	Tactical Single-Channel Radio Communications Techniques
FM 24-19	Radio Operators Handbook
FM 34-130	Intelligence Preparation of the Battlefield
FM 44-1	US Army Air Defense Artillery Employment
FM 44-3	US Army Air Defense Artillery Employment, Chaparrel/Forward/Vulcan/Stinger
FM 44-8	Combined Arms for Air Defense
FM 44-16	Chaparrel/Vulcan/Stinger/Platoon Combat Operations
FM 44-18	Army Air Defense Employment (Stinger)
FM 44-18-1	Stinger Team Operations, 31 Dec 1984
FM 44-31	Tactics, Techniques, and Procedures for Avenger Squad Operations
FM 44-44	Avenger Platoon, Section, and Squad Operations
FM 44-46	MANPADS Platoon, Section, and Team Operations
FM 44-64	SHORAD Battalion and Battery Operations
FM 44-80	Visual Aircraft Recognition Manual
FM 44-100-2	Air Defense Artillery Reference Handbook
TM 9-1425-433-10	Guided Missile Battery Control Central, Vehicle Mounted Avenger Air Defense Weapon System
TM 9-1425-429-12	Operator's and Organizational Maintenance Manual: Stinger Guided Missile System. Consisting of: Weapon Round Partial Gripstock Trainer Handling Guided Missile Launcher M-60, Interrogator Set AN/PPX-3A, AN/PPX-3B, Interrogator Set Programmer AN/GSX-1A
TM 9-1425-2586-10	Operator's Manual for Chaparral M48A2 Air Defense Guided Missile System (Chaparral Air Defense Guided Missile System), 28 June 1984 (Change 8, February 1990)
TM 11-5820-401-10-2	Operator's Manual: Radio Sets AN/VRC-12, AN/VRC-43 through AN/VRC-49 (used with an intercom system)
TM 11-5820-890-10-1	SINCGARS Ground Combat Net Radio, ICOM
TM 11-5820-890-10-2	Operator's Manual for Radio Sets, AN/PRC-119, AN/VRC-87, AN/VRC-88, AN/VRC-89, AN/VRC-90, AN/VRC-91, AN/VRC-92
TM 11-5820-890-10-4	Operator for Radio Set AN/PRC-119, VRC 87-92
TM 11-5825-291-13	Satellite Signal Navigation Set AN/PSN-11
TM 11-5830-340-12	Operator's and Organizational Maintenance Manual for Intercommunication Set, AN/VIC-1(V)
TM 11-5895-1194-24P-2	Interrogator Set Programmer AN/GSX-1/A
TM 083199A-12	Stinger Launch Simulator TM 08319A-12
TM 08487A-14/1	Volume I DCT
TM 09480A-12&P/1	AN-UPS-3 Display Unit
TM 09871A-12/1	Guided Missile Battery Control Central Vehicle Mounted AN/TWQ-1
TM 2320-10/6A	Operator's Manual for M998/M1038
TM 10152A-24&P	Organizational and Intermediate Maintenance Instructions including Repair Parts List for Machine Gun, .50 Cal, M3P
TM 10296A-10/1-1	Field Handbook Expeditionary Air Defense System (EADS) Director Unit (DU)
TM 4700-15/41	Equipment Repair Procedures Manual

TB 11-5825-291-10-2	Soldiers Guide for the PLGR (Precision Lightweight GPS Receiver)
BR-20278	Contingency Fire Unit Users Manual
BR-19972A	FDU/WDU Users Manual, KL-43C Operators Manual
CMS-21A	CMS Policy and Procedures for Navy Electronic Key Management System Tiers 2 and 3
ACP-125	Allied Communications Publication Communication Instructions Radiotelephone Procedures
N/A	EADS Software Guide
N/A	Tactical Alert Defense Radar Set, August 1995
N/A	AN/PAS-18 Receiver Infrared System Student Guide, April 1994
N/A	Stinger Troop Proficiency Trainer (STPT Instructors Manual, February 1993)

### 320. LIVE/SIMULATOR EVENT TRAINING FOR LAAD GUNNERS

#### 1. COMBAT CAPABLE STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
USAADASCH			60.00%

#### 2. COMBAT READY STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
SYSTEM TRAINING	9	11.5	4.50%
OPERATIONS	5	15	5.00%
SURFACE-TO-AIR WEAPONS	4	13	2.75%
QUALIFICATION	1	2	2.75%
COMBAT READY TOTALS:	19	60.5	15.00%

#### 3. COMBAT QUALIFICATION STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
OPERATIONS	5	8.5	6.25%
SURFACE-TO-AIR WEAPONS TRAINING	4	4.5	5.00%
QUALIFICATION	2	96	8.75%
COMBAT QUALIFICATION TOTALS:	11	109	20.00%

#### 4. FULL COMBAT QUALIFICATION STAGE OF TRAINING

STAGE	EVENTS	HOURS	PERCENT
SYSTEMS	1	1.5	0.50%
OPERATIONS	2	49	1.50%
SURFACE-TO-AIR WEAPONS TRAINING	1	1	0.50%
QUALIFICATION	1	2	2.50%
FULL COMBAT QUALIFICATION TOTALS:	5	53.5	5.00%

330. LIVE/SIMULATOR EVENT PERFORMANCE REQUIREMENTS

1. General. The majority of the low altitude air defense syllabus is ground training which requires in-depth integration within the MACCS. Likewise, development of MAGTF training involving extensive integration with the Ground Combat Element (GCE) is mandatory in the development of a Combat Qualified LAAD gunner/team leader.

a. Live Training. Training event condition codes listed as L (live) and L/S (live preferred/simulator optional) in this syllabus designate training to be conducted without the aid of simulator devices. Training not conducted in the live training environment shall be replaced with simulation where applicable as indicated in the condition code. Any engagement of a friendly aircraft during an aircraft tracking cycle constitutes failure of that cycle. A failed cycle must be repeated until it is successfully accomplished.

b. Simulator Training. Training event condition codes listed as S (simulator) and S/L (simulator preferred/live optional) in this syllabus designate training to be conducted in the Improved Moving Target Simulator (IMTS), Institutional Conduct of Fire Trainer (ICOFT), or using the Stinger Troop Proficiency Trainer (STPT) where applicable. Training not conducted in the MTS shall be replaced with live tracking exercises where applicable as indicated in the condition code. Any engagement of a friendly aircraft during an aircraft tracking cycle constitutes failure of that cycle. A failed cycle must be repeated until it is successfully accomplished.

3. Minimum Performance Time for Syllabus "Write-Off"/Designations. Any LAAD personnel may receive credit for successful completion of any syllabus requirement (except qualifications) upon applicable (written, oral, or practical) demonstration of proficiency, at the commanding officer's discretion. Completion of 70% of any syllabus requirement (except qualifications) may be "written-off" as complete at the discretion of the designated evaluator. Qualifications require a completed performance evaluation, and the designation must be signed by the unit commanding officer.

4. Evaluation of Training. Training event condition codes listed as E (evaluate) in this syllabus indicate events which are academic in nature and must be evaluated by either written/oral examination or a combination of the two means. Operational and system-related subjects will be evaluated by practical application means whenever possible. Performance evaluation to qualify for LAAD designations will be conducted per T&R Manual, Administrative, and the standardized evaluation forms provided by the program sponsor.

331. COMPONENTS OF A T&R EVENT

1. General. An event contained within a T&R manual is an individual or collective training standard and contains seven or eight components, dependent on the tier in which they are contained:

1/ <u>OPS-XXX</u>	2/ <u>0.5</u>	3/ 4/ <u>T,C,R,E</u>	5/ <u>EQUIP</u>	6/ <u>L/S</u>	<u>(NS)</u>
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Goal. The title of a unit of work that needs to be done in the performance of a Marine's duties. It is a clearly stated performance-oriented action requiring learned skills and knowledge, i.e., Engage a rotary wing aircraft.

Requirement. The condition(s) set for the real-world or combat circumstances in which the tasks are to be performed. They indicate what is provided (equipment, tools, materials, manuals,

aids, etc.), environmental constraints or conditions under which the task is performed, and any specific cues or indicators to which the performer must respond. When resources or safety requirements limit the conditions, this should be stated.

Performance Standards. The performance standard indicates the basis for judging the effectiveness of the performance. It consists of a carefully worded statement that identifies the proficiency level expected when the task is performed. It is not guidance, it is inviolate. Performance standards are specified in terms of accuracy, speed, sequencing, quality of performance, adherence to procedural guidelines, etc.

Performance Steps. *Listed for 100-level T&R events only.* Performance steps are the actions or decisions required to fulfill proficiency established by the standard. The major performance steps that are required to perform the task to proficiency are listed in the order of performance. Minor steps are not listed.

Prerequisite. Provides a listing of academic training or other T&R events which must be completed prior to satisfying the task.

Reference. Listing of doctrinal or reference publications that may assist the trainee in satisfying the performance standards, or the trainer in evaluating the effectiveness of task completion.

Ordnance. A listing of ordnance types and quantities required to satisfy the task.

External Syllabus Support. A listing or description of the external support requirements that may be required to satisfy completion of the task. May include range requirements, support aircraft, targets, training devices, or other personnel and equipment.

#### NOTES:

- 1/ Events are coded per Appendix B of the Administrative T&R Manual.
- 2/ Projected Event Duration is furnished as a planning tool.
- 3/ Denotes the applicable Program of Instruction (Basic POI is understood).  
POI Codes: **T** = transition; **C** = conversion; **R** = refresher.
- 4/ An "**E**" indicates an Evaluated event.
- 5/ The equipment or activity sub-category is listed. Equipment and activity codes: **AVG** = Avenger; **COMM** = Communications; **EMPL** = Employment; **GBDL** = Ground Based Data Link; **GUN** = M3P .50 Caliber Machine Gun; **IFF** = Identification Friend or Foe; **NAV** = Navigation; **PLNG** = Planning; **STG** = Stinger; and **SPTE** = Support Equipment.
- 6/ Condition Code: **L** = live training; **S** = simulator training; **L/S** = live preferred/simulator optional; **S/L** = simulator preferred/live optional; **N** = Night; **NS** = Night Vision Device; Where contained within ( ) denotes optional conditions.

332. COMBAT CAPABLE TRAINING1. Familiarization Training (FAM)

a. Purpose. To develop basic knowledge of principles and concepts relating to LAAD operations which enable the development of basic proficiency in those individual skills necessary for a LAAD gunner.

b. General

(1) Administrative Notes. None.

(2) Prerequisite. The Marine should meet the basic MOS qualifications and prerequisites as outlined in MCO P1200.7, MOS Manual.

c. Crew Requirements. Event training during the Combat Capable training stage will focus on the individual gunner. The requirement to train as part of a MANPAD team or Avenger team is event-dependent.

d. Academic Training. Academic training during the Combat Capable training stage will be accomplished in accordance with the Program of Instruction for the Stinger Gunner/Avenger Crewmember course conducted by the Marine Corps Detachment, U.S. Army Air Defense Artillery Center and School, Ft. Bliss, TX.

e. Live and Simulator Event Training (1 Event, 1 Hour)

<u>FAM-100</u>	<u>1.0</u>	<u>E</u>	<u>TRNG</u>	<u>S/L</u>
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Goal. Demonstrate knowledge of the Low Altitude Air Defense LAAD Bn.

Requirement. In an academic setting, the gunner will be given a written exam on the LAAD Bn. The gunner will score at least 80% correct on the written exam.

Performance Standards. At a minimum, the gunner will correctly:

- (1) State the organization of the LAAD Bn, to include number of batteries, platoons, sections, and teams per unit.
- (2) State the geographical location of all LAAD units.
- (3) State mission of the LAAD Bn.
- (4) State the doctrinal radio nets organic to the
- (5) battalion.
- (6) Identify the staff sections of the battalion and their functions.
- (7) State levels of support the battalion provides to MAGTFs.

Performance Steps. None.

Prerequisite. None.

Reference. MCWP 3-25.10 and MCWP 3-25.11.

Ordnance. None.

External Syllabus Support. None.



## 2. Systems Training (SYS)

a. Purpose. To develop requisite skills and working knowledge relating to the characteristics, capabilities, limitations, and operation of LAAD related systems or equipment which LAAD gunners are required to operate and maintain.

### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Systems training will be executed as collective training at the appropriate organizational level (TM/SECT) as dictated by the conditions listed for each event.

d. Academic Training. Academic training during the Combat Capable training stage will be accomplished in accordance with the Program of Instruction for the LAAD Gunner's course conducted by the Marine Corps Detachment, U.S. Army Air Defense Artillery Center and School, Ft. Bliss, TX.

### e. Live and Simulator Event Training (27 Events, 105.0 Hours)

<u>SYS-100</u>	<u>39.0</u>	<u>HMV</u>	<u>L</u>
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Goal. Drive an M998 series vehicle.

Requirement. Given an M998 series vehicle and basic issue items, the gunner is required to drive the vehicle across varying terrain, and in all weather conditions.

Performance Standards. Apply driving techniques for operating the vehicle across varying terrain and in all weather conditions. Drive the vehicle safely without damage to the vehicle or injury to personnel, and at end of training syllabus passes the required written and practical exams to become a licensed M998 operator.

Performance Steps. The gunner will perform the following steps with the M998 series vehicle:

- (1) Before starting engine checks.
- (2) Start engine.
- (3) Place vehicle in motion (normal conditions).
- (4) Blackout operation.
- (5) Place vehicle in motion (unusual conditions).
- (6) Hills, steep grades, and slopes.
- (7) Extreme cold, on ice or snow.
- (8) Dusty, sandy area.
- (9) Mud.
- (10) Extreme heat.
- (11) Rainy and humid conditions.
- (12) Water.
- (13) Stop vehicle and engine.
- (14) Perform required PM.

Prerequisite. Appropriate periods of instruction.

Reference. FM 21-305.

Ordinance. None.

External Syllabus Support. None.

SYS-101

1.0

HMV

L

Goal. Perform preventive maintenance on the HMMWV.

Requirement. In a practical application exercise, the gunner, when given a fully equipped HMMWV, tools, and equipment will perform PMCS on the vehicle.

Performance Standards. The standards for this task are met when the gunner successfully PMs the vehicle, and properly fills out the PM checklist.

Performance Steps. The gunner will follow the steps prescribed in the PMCS checklist for weekly preventative maintenance:

- (1) Check the engine compartment.
- (2) Check the instruments.
- (3) Check for drive train leakage.
- (4) Check the body.
- (5) Add fluids and lubricants.
- (6) Fill out PM checklist.

Prerequisite. Appropriate periods of instruction.

Reference. Unit PM Checklist.

Ordinance. None.

External Syllabus Support. None.

SYS-102

0.5

STG

L

Goal. Convert a Stinger missile round to a weapon round.

Requirement. During a practical application exercise and within 3 minutes, the gunner, given a Stinger missile round will convert it to a weapon round as prescribed in TM 9-1425-429-12. The evaluator will inform the gunner that he has fired his ready round and removed the BCU. Additional missile rounds are available and have been removed from the containers. Provide one FHT with gripstock and one FHT without, to simulate a weapon round and missile round. The gunner begins the task with the ready round on his shoulder and the antenna up. The missile round is located nearby.

Performance Standards. Gunner will convert a missile round to a weapon round per the reference within 3 minutes.

Performance Steps. The gunner performs the following steps:

- (1) Folds antenna.
- (2) Disconnects IFF interconnecting cable from gripstock.
- (3) Places weapon on ground with gripstock up.
- (4) Disengages gripstock latch.
- (5) Separates gripstock from launch tube.
- (6) Removes the gripstock connector protective cover from the new missile round.
- (7) Engages gripstock pin to missile round hinge.

(8) Engages gripstock latch.

Prerequisite. None.

Reference. FM 44-18-1 and TM 9-1425-429-12.

Ordnance. None.

External Syllabus Support. None.

#### SYS-103

2.0

STG

S

Goal. List and describe the capabilities and limitations of the Stinger missile system (Basic/RMP).

Requirement. In an academic setting and without the aid of reference, the gunner will, given a written examination, list and describe the capabilities and limitations of the Stinger missile system (Basic/RMP).

Performance Standards. The gunner will score 80% or greater on a written examination.

Performance Steps. At a minimum, the gunner will list the following capabilities and limitations:

- (1) Maximum target velocity.
- (2) Maximum range.
- (3) Maximum altitude.
- (4) Inner launch boundary.
- (5) Firing angle limitations.
- (6) IR/UV discrimination.

Prerequisite. Appropriate periods of instruction.

Reference. MCWP 3-25.10, FM 44-18-1, FM 44-1, and FM 44-18.

Ordnance. None.

External Syllabus Support. None.

#### SYS-104

1.0

STG

L

Goal. Inspect a Stinger weapon round.

Requirement. Accurately perform the appropriate inspections on the following devices. One Field Handling Trainer (FHT) will be provided for the evaluation.

Performance Standards. Given a FHT, the gunner will perform the 13 critical checks on a training Stinger missile.

Performance Steps. The gunner will perform the checks in the following sequence:

- (1) Blowout disk.
- (2) Squib igniter leads.
- (3) Launch tube.
- (4) Humidity indicator.
- (5) IR/Transmissive window.
- (6) Range ring.
- (7) Rear sight reticle.

- (8) Acquisition indicators.
- (9) Safety and actuator switch.
- (10) Uncage bar.
- (11) Firing trigger.
- (12) Latch mechanism.
- (13) Battery Coolant Unit (BCU).

Reference. FM 44-18-1.

Ordnance. None.

External Syllabus Support. None.

SYS-105

1.0

STG

S/L

Goal. Perform hangfire, misfire, and dud emergency procedures for the Stinger missile.

Requirement. During a practical application exercise, the gunner will correctly perform the proper hangfire, misfire, and dud procedures for a Stinger weapon.

Performance Standards. The gunner is provided a Stinger FHT with a dummy BCU and interrogator. The gunner takes immediate action and performs the proper procedures for a hangfire, misfire, and dud procedures as prescribed in TM 9-1425-429-12.

Performance Steps. The gunner will perform the following procedures for a hangfire/misfire/dud (eject only) of the Stinger missile:

Hangfire:

- (1) Continues to track the target for an additional 3 to 5 seconds, keeping firing trigger and uncage bar depressed.

Misfire:

- (1) Immediately removes the BCU with left hand. Removes the IFF interconnecting cable from the gripstock.
- (2) Places the weapon on the ground with the forward end elevated about 20 degrees and pointed away from friendly personnel.
- (3) Marks the location of the weapon so that it can be observed from a safe location.
- (4) Notifies EOD of the situation.

DUD (Eject Only):

- (1) Marks location of missile.
- (2) Notifies EOD of the situation.

Prerequisite. Appropriate periods of instruction.

Reference. FM 44-18-1, TM 9-1425-429-12, and TM 9-1425-433-10.

Ordnance. None.

External Syllabus Support. None.



Reference. MCWP 3-25.10, MCRP 3-25.10A, FM 44-18, and FM 44-18-1.

Ordinance. None.

External Syllabus Support. None.

SYS-108

16.0

COMM

L

Goal. Operate the SINCGARS radio.

Requirement. During a practical application exercise, the gunner, given a communication requirement, will prepare and operate the SINCGARS single channel (SC). The following equipment is provided:

- (1) Secure SINCGARS prepared for operation.
- (2) ECCM fill device with FH data.
- (3) KYK-13/TSEC with keys.
- (4) AN/CYZ-10.
- (5) Distant net control station.
- (6) TM 11-5820-890-10-3 (ICOM).
- (7) TM 11-5820-890-10-3 (non-ICOM).
- (8) Unit ACEOI (Automated Communications Electronics Operating Instruction).

Performance Standards. For the single channel (SC) mode, the standard is met when a secure radio check is made.

Performance Steps. The gunner will perform the following steps when preparing the SINCGARS for operation:

- (1) Install battery(ies).
- (2) Install antenna.
- (3) Connect handset H-250.
- (4) Set battery life condition.
- (5) The gunner will perform the following steps when operating the SINCGARS single channel (SC):
  - (a) Perform before PMCS.
  - (b) Load correct frequency.
- (6) Perform after PMCS.

Prerequisite. Appropriate periods of instruction.

Reference. FM 24-18, FM 24-19, ACEOI, TM 11-5820-890-10-1, TM 11-5820-890-10-2, and TM 11-5820-890-10-4.

Ordinance. None.

External Syllabus Support. None.

SYS-109

1.0

COMM

S

Goal. State proper handling of CMS materials.

Requirement. Given the reference and in a academic environment, properly store, use, and destroy CMS materials.

Performance Standards. Demonstrate the procedures for handling CMS material during a written examination and in an academic environment.

Performance Steps. The gunner will:

- (1) Identify the CMS software and corresponding equipment.
- (2) State the proper handling considerations for CMS material in a tactical environment.
- (3) State the proper transportation considerations for CMS in a tactical environment.
- (4) State the destruction procedures in accordance with CMS-21A.
- (5) Define Two Person Integrity (TPI).

Prerequisite. None.

Reference. CMS-21A.

Ordinance. None.

External Syllabus Support. None.

SYS-110

3.0

COMM

L

Goal. Operate intercommunication set AN/VIC-1.

Requirement. During a practical application exercise, the gunner is given a fully powered-up Avenger with AN/VRC-91 and will operate the AN/VIC-1.

Performance Standards. Standard is met when the intercommunications set has been operated from a control box per given publications and performance measures 3 through 4 within 15 minutes. Satisfactory completion of each performance measure, in sequence, is required.

Performance Steps. Each gunner will perform the following steps:

- (1) Set MAIN JUNCTION BOX-AMPLIFIER controls (AM-1780/VRC).
- (2) Connect audio accessories.
- (3) Operate the CVC/AVC helmet's PUSH-TO-TALK switch.
- (4) Operate the intercom system.
- (5) Shut down the system.

Prerequisite. Appropriate periods of instruction.

Reference. TM 11-5830-340-12, TM 11-5820-890-10-1, TM 11-5820-890-10-2, and TM 11-5820-890-10-4.

Ordinance. None.

External Syllabus Support. None.

SYS-111

1.5

NAV

L

Goal. Operate the AN/PSN-11 Precision Lightweight Global Positioning System Receiver (PLGR).

Requirement. During a practical application exercise, the gunner, given a PLGR, a map, and a tactical scenario, will successfully navigate under real world conditions.

Performance Standards. Utilizing the PLGR, the gunner will correctly input required data, move to, and navigate from designated points.

Performance Steps. The gunner will:

- (1) Enter appropriate map datum.
- (2) View position display.
- (3) Enter waypoints.
- (4) Perform navigation operations.

Prerequisite. Appropriate periods of instruction.

Reference. TM 11-5825-291-13.

Ordinance. None.

External Syllabus Support. Appropriate training area.

SYS-112

3.0

COMM

L

Goal. Operate the RTU.

Requirement. During a practical application exercise, the gunner, given a tactical scenario, will employ the RTU from either the MANPAD or Avenger configuration.

Performance Standards. The gunner will receive and process early warning data utilizing the RTU.

Performance Steps. The gunner will perform the following steps in order:

- (1) Activate RTU.
- (2) Initialize RTU.
- (3) Configure system or configure for system outside cab, if applicable.
- (4) Select units of measure.
- (5) Select CDT emulator if applicable.
- (6) Enter air density and temperature.
- (7) Enter fire permit limits.
- (8) Enter north reference.
- (9) Start BIT test.
- (10) Select emplacement data.
- (11) Receive data.
- (12) Process data.
- (13) Engage target (engage target with Slew-to-Cue if applicable).
- (14) VMF related training.

Prerequisite. Appropriate periods of instruction.

Reference. None.

Ordinance. None.

External Syllabus Support. RCMAT or targets of opportunity.

SYS-113

2.0

AVG

L

Goal. Load and unload Stinger missiles from the Avenger.

Requirement. During a practical application exercise, the gunner is advised by an evaluator that his Avenger has expended its missiles and is directed to prepare the unit for reload. The gunner will proceed to load a Standard Vehicle Mounted Launcher



(SVML) with 1 Captive Flight Trainer (CFT). Once the missile pod is loaded and the fire unit is in power-up status, the gunner will then unload the missile from the Avenger. The following equipment is provided:

- (1) One fully-equipped Avenger.
- (2) One CFT.

Performance Standards. Load the missile pods per procedures outlined in TM 9-1425-433-10, paragraph 3-46. Accomplish this task within 3 minutes. Unload the missile pod per procedures outlined in TM 9-1425-433-10, paragraph 3-46. Accomplish this task in 3 minutes.

Performance Steps. The gunner performs the following steps during missile load:

- (1) Position the turret for loading.
- (2) Prepare the SVML.
- (3) Load missile into SVML.

The gunner performs the following steps during missile unload:

- (1) Position the turret for unloading.
- (2) Unload missile from SVML.
- (3) Close and latch access doors.
- (4) Rotate turret to 270 degrees azimuth and elevates SVML to maximum (68 degrees).

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-429-12.

Ordinance. None.

External Syllabus Support. None.

SYS-114

2.0

GUN

L

Goal. Mount and remove the M3P machine gun from the Avenger.

Requirement. During a practical application exercise, the gunner will correctly mount and remove the machine gun. One fully-equipped Avenger and the assistance from another crew member will be made available.

Performance Standards. The machine gun will be mounted per procedures outlined in TM 9-1425-433-10, paragraph 3-12. Accomplish this task within 5 minutes. The machine gun will be removed from the Avenger per procedures outlined in TM 9-1425-433-10, paragraph 3-12. Accomplish this task within 5 minutes.

Performance Steps. The gunner will perform the following steps when mounting the M3P machine gun:

- (1) Position the turret for machine-gun mounting.
- (2) Set MAIN PWR selector to OFF, COMM, or SAFE.
- (3) Install machine gun in elastic cradle and secure with trunion pin.
- (4) Install link and brass collector.
- (5) Connect ammunition feed chute to rigid feed chute.

- (6) Connect electrical connector to solenoid sensor assembly.

The gunner will perform the following steps when removing the M3P machine gun:

- (1) Position turret to remove machine gun.
- (2) Disconnect electrical connector from solenoid sensor assembly.
- (3) Set ARM switch to ARM.
- (4) Pull GUN circuit breaker and set ARM switch to SAFE.
- (5) Power down the fire unit.
- (6) Disconnect ammunition feed chute from rigid feed chute.
- (7) Remove link and brass collector.
- (8) Pull trunion pin to release the gun elastic cradle.
- (9) Remove machine gun from mount.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SYS-115

1.0

GUN

L

Goal. Boresight and align the M3P machine gun and optical sight.

Requirement. During a practical application exercise, the gunner, given a fully equipped Avenger, boresight kit, tools, and assistance from another crew member, will boresight the machine gun and optical sight. A reference point at least 1,000 meters away must be visible for boresighting.

Performance Standards. The machine gun boresight is checked and adjusted per TM 9-1425-433-10, paragraph 3-16. Task is accomplished within 18 minutes. Evaluator will point out reference point used to boresight optical sight, and verify the FLIR crosshairs are on the center of boresight target per TM 9-1425-433-10, paragraph 3-15.

Performance Steps. Each gunner will perform the following steps for boresight alignment:

- (1) Perform azimuth adjustment.
- (2) Perform elevation adjustment.
- (3) Remove boresight telescope from gun barrel.
- (4) Install brass and link collector.

Each gunner will perform the following steps for boresight check and adjustment (optical sight):

- (1) Set MAIN PWR selector to ENGAGE.
- (2) Set FLIR to WFOV.
- (3) Select reference point (minimum 1,000 meters) and rotate turret to center FLIR cross hairs on the reference point.
- (4) Check that optical sight crosshairs are centered on the selected reference point.
- (5) Adjust sight in azimuth to align vertical line of sight crosshairs with vertical line of reference center point.

- (6) Verify that vertical line of sight crosshairs are aligned with vertical line of reference points.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SYS-116

1.0

GUN

L

Goal. Set headspace and timing on the M3P machine gun.

Requirement. During a practical application exercise, the gunner, given a fully-equipped Avenger and appropriate tools, will properly set the headspace and timing with the assistance of another crew member.

Performance Standards. Gunner will recognize when headspace and timing checks are necessary per TM 10152A-24&P. Headspace and timing will be set within 5 minutes.

Performance Steps. The gunner will use the following steps when setting headspace and timing:

- (1) Position turret for setting headspace and timing.
- (2) Set headspace IAW the references.
- (3) Set timing IAW the references.

Prerequisite. Appropriate periods of instruction.

Reference. TM 10152A-24&P, TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SYS-117

1.0

GUN

L

Goal. Load and unload the M3P machine gun.

Requirement. During a practical application exercise, the gunner, given a fully-equipped Avenger and 250 rounds of .50 caliber linked dummy ammunition, will properly load and unload the machine gun with the assistance of another crew member.

Performance Standards. The machine gun has been loaded and unloaded per procedures outlined in TM 9-1425-433-10, paragraph 3-47. Loading is accomplished within 9 minutes and unloading within 3 minutes.

Performance Steps. The gunner will use the following steps when loading the machine gun:

- (1) Position turret for loading.
- (2) Load the ammunition magazine.
- (3) Remount ammunition magazine.
- (4) Install brass and link collector.
- (5) Chamber a round into the machine gun.

The gunner will use the following steps when unloading the machine gun:

- (1) Position turret for unloading.
- (2) Perform clearing action for machine gun.
- (3) Set ARM switch to SAFE.
- (4) Remove brass and link collector, checking for presence of a live round (if applicable).
- (5) Remove ammunition chute and any remaining live rounds.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. 100 rounds of dummy .50 caliber linked ammunition.

External Syllabus Support. None.

SYS-118      4.0                                      AVG                                      L/S

Goal. Emplace the Avenger.

Requirement. During a practical application exercise, a firing position has been selected for the gunner's Avenger and his team leader directs him to emplace and prepare for action. Assistance from a crew member and a fully-equipped Avenger are available.

Performance Standards. Emplace and prepare the Avenger for action per procedures outlined in TM 9-1425-433-10, paragraphs 3-29f and 3-32. Accomplish this task in 8 minutes.

Performance Steps. Each gunner will perform the following steps:

- (1) Input the data into CDT.
- (2) Disconnect CDT and CVC helmet.
- (3) Close canopy and install canopy cover.
- (4) Connect CDT and CVC helmet to receptacle on RCU.
- (5) Prepare RCU for operation.
- (6) Perform intercom check with gunner.
- (7) RTU related training.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10 and Unit Operational Handbook.

Ordinance. None.

External Syllabus Support. None.

SYS-119      4.0                                      AVG                                      L/S

Goal. March order the Avenger.

Requirement. During a practical application exercise, the gunner will receive an order from his team leader to prepare the Avenger for march order. The gunner will be provided with a fully-equipped, emplaced Avenger and assistance from another crew member.

Performance Standards. The gunner will prepare the Avenger for march order per TM 9-1425-433-10, paragraph 3-37. This task is accomplished within 6 minutes.

Performance Steps. The gunner will perform the following steps when march ordering the Avenger:

- (1) Prepare for march order from a remote emplacement.
- (2) Prepare turret for march order.
- (3) Prepare the turret for a non-tactical march order.
- (4) Prepare the turret for a tactical march order.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10 and Unit Operational Handbook.

Ordinance. None.

External Syllabus Support. None

SYS-120      2.0                              AVG/COMM/TDAR      L

Goal. Establish a Ground Based Data Link (GBDL)

Requirement. During a practical application exercise, given a tactical scenario, an Avenger, an RTU, and a PLGR, the gunner will establish data communications with the GBDL.

Performance Standards. In accordance with the TM 9-1425-433-10 and the 7.3 software guide, the gunner will establish data communications. Communications will be established within 10 minutes after emplacing the Avenger.

Performance Steps. The gunner will perform the following steps:

- (1) Initialize and enter site emplacement data into the RTU.
- (2) Establish connection with a GBDL station.
- (3) Verify link connectivity with the RTU.

Prerequisite. Appropriate periods of instruction.

Reference. EADS Software Guide.

Ordinance. None.

External Syllabus Support. None.

SYS-121      1.0                              AVG                              L

Goal. Perform emergency procedures for hangfire/misfire (Avenger).

Requirement. During a practical application exercise and provided with one fully-equipped Avenger and assistance from another crew member, the gunner will attempt to fire a simulated missile from the Avenger, but the missile fails to leave the SVML. The gunner will correctly perform the proper hangfire/misfire procedures for a Avenger.

Performance Standards. Prepare the fire unit to simulate a missile malfunction and designate a missile as malfunctioning.

Performance Steps. The gunner will perform the following procedures for a misfire/hangfire in the Avenger:

- (1) Set ARM switch to SAFE.

- (2) Position turret with both ends of missile pointed away from personnel with pod elevation set to approximately +20 degrees.
- (3) Power down the fire unit.
- (4) Observe safety procedures by remaining in the turret during the 10-minute waiting period.
- (5) Upon mission completion, the missile may be removed from the pod by the operating crew after a 60-minute waiting period.
- (6) Notify EOD of situation.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordnance. None.

External Syllabus Support. None.

SYS-122

1.0

GUN

L

Goal. Perform immediate action on the M3P machine gun.

Requirement. During a practical application exercise, the gunner will correctly perform immediate action on an M3P machine gun. Prepare the Avenger to simulate a machine gun malfunction during initial or sustained firing. Provide the gunner a fully-equipped Avenger and assistance from another crew member.

Performance Standards. The gunner will handle the malfunction as a real machine gun malfunction. Direct the gunner to perform both cool and hot gun procedures. Immediate action procedures will be performed as prescribed in TM 9-1425-433-10, paragraph 3-3. There is no time limit imposed on this task.

Performance Steps. The gunner will perform the following steps when performing immediate action for a malfunction of the M3P machine gun:

- (1) Perform immediate action procedures (cool weapon).
- (2) Perform immediate action procedures (hot weapon).

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordnance. None.

External Syllabus Support. None.

SYS-123

4.0

AVG/GUN

L

Goal. Troubleshoot the Avenger and M3P machine gun.

Requirement. During a practical application exercise, the gunner will correctly perform troubleshooting procedures on a system malfunction of the Avenger, M3P machine gun, and/or a fault message appearing on the CDT. Assistance from a crew member and the following are available:

- (1) A fully-equipped Avenger fire unit.
- (2) One M3P with tool kit.

- (3) TM 9-1425-433-10.
- (4) EROSL.

Performance Standards. A simulated fault may be inserted into the Avenger and M3P machine gun for training purposes. Brief the gunner to troubleshoot for the symptom the evaluator names. The symptom should be one of those listed in TM 9-1425-433-10, table 3-3 (Avenger) and table 3-4 (M3P machine gun). The gunner will troubleshoot the fire unit, per TM 9-1425-433-10, paragraph 3-3, table 3-3 (Avenger) and paragraph 3-3, table 3-4 (M3P machine gun). Correct all deficiencies within your echelon of maintenance (EOM) per the current edition of MCO P4790.7, TM 4700-15/1, and the appropriate Avenger Technical manuals. Record all maintenance tasks performed on the equipment repair order/equipment repair order shipping list (ERO/EROSL). Report all uncorrected deficiencies to the next higher EOM sections. Accomplish the Avenger task within 10 minutes. Accomplish the M3P task within 15 minutes.

Performance Steps. The steps listed below are to be used when troubleshooting the Avenger:

- (1) Inspect fire unit to verify presence of malfunction.
- (2) Select correct probable cause of the malfunction.
- (3) Identify the corrective action required to correct malfunction.
- (4) Correct malfunction and record the maintenance task performed per the Avenger technical manuals and the appropriate maintenance forms.

The steps listed below are to be used when troubleshooting the M3P machine gun:

- (1) Inspect machine gun to verify presence of a malfunction.
- (2) Identify and perform the corrective action required to correct the malfunction.
- (3) Correct malfunction and record the maintenance task performed per the Avenger technical manuals and the appropriate maintenance forms.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SYS-124

2.0

COMM

L

Goal. Perform operator troubleshooting on the SINCGARS.

Requirement. During a practical application exercise, the gunner will perform operator's troubleshooting on SINCGARS, given a SINCGARS operating on a net.

Performance Standards. The standard is met when the gunner correctly identifies the fault.

Performance Steps. Each gunner will perform the following steps:

- (1) Check power source.

- (2) Manpack.
- (3) Vehicular.
- (4) Run RT self-test (BIT).
- (5) Check signal display.
- (6) Check sidetone.

Prerequisite. Appropriate periods of instruction.

Reference. FM 24-18, FM 24-19, ACEOI, TM 11-5820-890-10-1, TM 11-5820-890-10-2, and TM 11-5820-890-10-4.

Ordinance. None.

External Syllabus Support. None.

SYS-125

2.5

GUN

L

Goal. Perform operator maintenance on the M3P machine gun.

Requirement. During a practical application exercise, the gunner will correctly perform maintenance on the M3P machine gun. A M3P machine gun, gun tool kit, cleaning material, lubricants, and assistance from another crew member are available. The machine gun is removed from the fire unit and positioned on a work table. Cleaning materials and lubricant will be available, if required.

Performance Standards. The gunner will perform operator maintenance on the M3P machine gun per procedures outlined in TM 9-1425-433-10, paragraphs 3-3, 3-9, and 3-13. The gunner will accomplish this task within 15 minutes.

Performance Steps. The gunner will perform the following steps when conducting operator maintenance on the M3P machine gun:

- (1) Disassemble the weapon.
- (2) Clean the weapon.
- (3) Lubricate the weapon.
- (4) Reassemble the weapon.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

SYS-126

4.0

AVG

L

Goal. Perform Preventive Maintenance Checks and Service (PMCS) on the Avenger.

Requirement. PMCS is due or ordered on the Avenger. During a practical application exercise, the gunner will conduct the proper PMCS on the Avenger. The following items are available:

- (1) A fully equipped Avenger.
- (2) TM 9-1425-433-10.
- (3) Tools, cleaning materials, and lubricants.
- (4) Correct malfunction and record the maintenance task performed per the Avenger Technical Manuals and the appropriate maintenance forms.



Performance Standards. Within 45 minutes, sequentially perform all items per TM 9-1425-433-10, table 3-3. Correct all correctable deficiencies and record all performed maintenance tasks on the appropriate maintenance forms.

Performance Steps. Each gunner will perform the following checks:

- (1) Before-operations checks.
- (2) Other checks to include BIT procedures.
- (3) During-operations checks.
- (4) After-operations checks.
- (5) Weekly checks and services.
- (6) Monthly checks and services.
- (7) Semi-annual checks and services.

Prerequisite. Appropriate periods of instruction.

Reference. TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

### 3. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment and operations in order to effectively execute a tactical mission as a member of a LAAD Team.

#### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Operations training will be executed as collective training at the appropriate organizational level (TM/SECT/PLT/BTRY/BN) as dictated by the conditions listed for each event.

d. Academic Training. Academic training during the Combat Capable training stage will be accomplished in accordance with the Program of Instruction for the Stinger Gunner/Avenger Crewmember course conducted by the Marine Corps Detachment, U.S. Army Air Defense Artillery Center and School, Ft. Bliss, TX.

#### e. Live and Simulator Event Training (2 Events, 36.0 Hours)

<u>OPS-100</u>	<u>4.0</u>	<u>STG</u>	<u>L</u>
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Goal. Establish a team position in the MANPAD configuration.

Requirement. During a practical application exercise, the gunner, given a tactical scenario, will properly establish a team position.

Performance Standards. Per the reference, given a tactical scenario, properly establish a team position in the MANPAD configuration.

Performance Steps. The gunner will perform the following steps:

- (1) Select firing positions within a given area selected by the section leader.
- (2) Select one alternate position 500 to 1000 meters from primary position.
- (3) Take into consideration all-around visibility and clear fields of fire.
- (4) Plan for good line-of-sight communications with section headquarters and supported unit.
- (5) Select a site that provides cover and concealment from enemy observation and ground fire.
- (6) Select a site that provides mutual support and/or overlapping fires.
- (7) Take into consideration safety/backblast limitations.

Prerequisite. Appropriate periods of instruction.

Reference. MCWP 3-25.10, MCWP 3-25.11, FM 44-18, and FM 44-18-1.

Ordinance. None.

External Syllabus Support. None.

OPS-101	32.0	<u>E</u>	<u>TRNG</u>	<u>S/L</u>
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Goal. Visually identify aircraft.

Requirement. In an academic environment, the gunner when given a test of various aircraft (based on current threat), and with the aid of audio visual equipment, will correctly identify the aircraft.

Performance Standards. Given an aircraft recognition test consisting of 50 aircraft, the gunner will successfully identify a minimum of 40 aircraft within a time of 5 seconds per aircraft and a 5 second delay between aircraft.

Performance Steps. The gunner will use the Wing, Engine, Fuselage, and Tail (WEFT) technique to identify the aircraft.

Reference. FM 44-80.

Ordinance. None.

External Syllabus Support. None.

#### 4. Surface-to-Air Weapons Training (SAW)

a. Purpose. To develop knowledge and proficiency of LAAD engagement techniques against live aircraft and drones.

##### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Surface-to-Air Weapons training will be executed as collective training at the appropriate organizational level (TM) as dictated by the conditions listed for each event.

d. Academic Training. Academic training during the Combat Capable training stage will be accomplished in accordance with the Program of Instruction for the Stinger Gunner/Avenger Crewmember course conducted by the Marine Corps Detachment, U.S. Army Air Defense Artillery Center and School, Ft. Bliss, TX.

e. Live and Simulator Event Training (4 Events, 47.0 Hours)

<u>SAW-100</u>	<u>16.0</u>	<u>STG</u>	<u>S/L</u>
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Goal. Engage an aircraft with the Stinger missile (MANPAD).

Requirement. During a practical application exercise, given a Tracking Head Trainer (THT), Moving Target Simulator (MTS), or Stinger Troop Proficiency Trainer (STPT), the gunner will engage an aircraft (fixed wing and rotary wing). The gunner is advised that a hostile target has entered his defended area and is within engagement range. The gunner will shoulder the weapon and prepare it for firing.

Performance Standards. The gunner will successfully engage three aircraft, demonstrating proper detection, acquisition, ranging, superelevation, and firing techniques.

Performance Steps. The gunner will perform the following steps:

- (1) Interrogate aircraft and listen for the response.
- (2) Visually identify the aircraft as hostile.
- (3) Track and range target.
- (4) Activate weapon and obtain an acquisition tone.
- (5) Press and hold uncage switch.
- (6) Insert correct superelevation and lead.
- (7) Press trigger to fire weapon.
- (8) Remove BCU within three minutes.

Reference. FM 44-18-1 and TM 9-1425-429-12.

Ordinance. None.

External Syllabus Support. Range for live tracking.

<u>SAW-101</u>	<u>16.0</u>	<u>AVG</u>	<u>S</u>
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Goal. Engage an aircraft with the Avenger.

Requirement. During a practical application exercise, the gunner, given an Avenger with an uploaded Captive Flight Trainer (CFT) or utilizing the Institutional Conduct of Fire Trainer (ICOFT), will track and engage fixed wing and rotary wing aircraft (simulated). The Avenger or simulator is powered-up, the MAIN PWR selector is set to ENGAGE, and the ARM switch is set to ARM position.

Performance Standards. Utilizing proper operating procedures and firing techniques, the gunner will successfully track aircraft in either the Avenger or ICOFT.

Performance Steps. The gunner will perform the following steps when engaging an aircraft from the Avenger or ICOFT:

- (1) Center target in reticle.
- (2) Press IFF CHALLENGE push button.
- (3) Visually identify the aircraft as hostile.

- (4) Press and release left thumb switch.
- (5) Press and hold left trigger switch.
- (6) Press and hold right trigger switch for 5 seconds.
- (7) Release left and right trigger switches.
- (8) Press and release left thumb switch.
- (9) Set ARM switch to SAFE position.
- (10) Place MAIN PWR selector in the RUN position.

Prerequisite. Appropriate periods of instruction.

Reference. FM 44-44 and TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. Radio-Controlled Miniature Aerial Target (RCMAT), targets of opportunity, and live tracking range.

SAW-102

10.0

AVG/GUN

L

Goal. Engage aerial and/or ground target with the M3P machine gun.

Requirement. During a practical application exercise, the gunner, given an Avenger loaded with 250 rounds of .50 caliber ammunition, will engage an aerial and/or ground target with the machine gun. The gunner may engage the designated target from either the turret or Remote Control Unit (RCU).

Performance Standards. Utilizing proper operating procedures and firing techniques, engage an appropriate aerial and/or ground target. Ensure the machine gun is properly bore-sighted and aligned and the headspace and timing is set per TM 9-1425-433-10.

Performance Steps. After properly loading the machine gun, the gunner will engage a designated target from either the turret or RCU. The gunner will perform the following steps:

- (1) Arm the weapon system.
- (2) Enable Laser Range Finder (LRF).
- (3) Select the gun mode.
- (4) Track and range the target.
- (5) Engage the target.

Prerequisite. Appropriate periods of instruction.

Reference. None.

Ordinance. 250 rounds linked .50 cal ammunition.

External Syllabus Support. 250 rounds .50 caliber ammunition (with 4:1 tracer mix), firing range and appropriate ground and/or aerial targets (RCMAT or Remotely Piloted Target Systems (RPVTS)). Scoring system, if available (ground/air).

SAW-103

5.0

STG,AVG

L

Goal. Engage a live aerial target with a Stinger missile (MANPAD or Avenger).

Requirement. During a live firing exercise, the gunner, given a Stinger missile (MANPAD or Avenger), will engage an aerial target.

Performance Standards. Utilizing proper operating procedures and firing techniques, the gunner will engage an aerial target from either the MANPAD or Avenger configuration.

NOTE: When firing from the Avenger the gunner may engage from either the turret or the RCU.

Performance Steps. The gunner will perform the following steps:

(1) MANPAD:

- (a) Track and ranges target.
- (b) Activate weapon and obtains an acquisition tone.
- (c) Insert correct superelevation and lead.
- (d) Press trigger to fire weapon and continue to rack target for three to five seconds.
- (e) Remove BCU within three minutes.

(2) Avenger:

- (a) Slew turret in direction of target.
- (b) Arm the weapon system.
- (c) Enable Laser Range Finder.
- (d) Track and range target.
- (e) Activate weapon and obtain acquisition tone.
- (f) Press left and right trigger and hold for three to five seconds.

Prerequisite. Appropriate periods of instruction.

Reference. FM 44-18-1 and TM 9-1425-429-12.

Ordnance. PL-89/PL-90/PL-93 Stinger missiles, PN-15/PN-16 Stinger gripstocks (Basic/RMP), L-477 Rocket Flares, J-106 rocket motors (3 or 4 per target based on range requirements).

External Syllabus Support. Appropriate aerial target (Ballistic Aerial Target, BQM-107, BQM-108, Banshee) and firing range.

## 5. Qualification Training (QUAL)

a. Purpose. To qualify as a Basic LAAD Gunner.

b. General

(1) Administrative Notes. Performance evaluation to qualify for LAAD designations will be conducted per T&R Manual, Administrative, and the standardized evaluation forms located in the appendix to this syllabus. Upon successful completion of a qualification event, the crewmember should be designated by the unit commanding officer and have a letter placed in their MACCS Performance Record stating their qualification.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Qualification training will be executed in accordance with the requirements for successful completion of the Stinger Gunner/Avenger Crewmember course conducted by the Marine Corps Detachment, U.S. Army Air Defense Artillery Center and School, Ft. Bliss, TX.

d. Academic Training. Academic training during the Combat Capable training stage will be accomplished in accordance with the Program of

Instruction for the Stinger Gunner/Avenger Crewmember course conducted by the Marine Corps Detachment, U.S. Army Air Defense Artillery Center and School, Ft. Bliss, TX.

e. Live and Simulator Event Training (1 Event, 2.0 Hours)

QUAL-100      2.0      E

Goal. Qualify as a Combat Capable LAAD Gunner.

Requirement. Given all formal periods of instruction and examinations, the Marine will qualify as a Combat Capable LAAD Gunner.

Performance Standards. The Marine will successfully complete the LAAD Gunner/Avenger Crewman course at the U.S. Army Air Defense Artillery Center, Ft. Bliss, TX.

Prerequisite. Completion of all 100-level events.

Reference. POI.

Ordinance. None.

External Syllabus Support. None.

333. COMBAT READY TRAINING

1. Systems Training (SYS)

a. Purpose. To develop requisite skills and working knowledge relating to the characteristics, capabilities, limitations, and operation of LAAD related systems or equipment which gunners are required to operate and maintain.

b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Systems training will be executed as collective training at the appropriate organizational level (TM/SECT) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Ready Stage as depicted in paragraph 310.

e. Live and Simulator Event Training (9 Events, 11.5 Hours)

SYS-200      1.0      AVG      L

Goal. March order the Avenger.

Requirement. During a practical application exercise, the Marine receives a movement order to prepare the Avenger for march order. A fully-equipped, emplaced Avenger, all T/E equipment, and assistance from another crewmember are available. Marines will perform both gunner and team leader duties.

Performance Standards. Prepare the Avenger for march order, with or without the gunner riding in the turret, per TM 9-1425-433-10, paragraph 3-37. All equipment is serviceable and loaded for movement. Correct improper performance as it occurs. Accomplish this task within 7 minutes (in MOPP 4, time extends to 8 minutes).

Prerequisite. None.

Reference. TM 9-1425-433-10 and Unit Standing Operating Procedures (SOP).

Ordinance. None.

External Syllabus Support. None.

SYS-201      1.0                                      AVG                                      L

Goal. Load and unload the Avenger.

Requirement. During a live-fire or practical application exercise, given an Avenger and a live missile or CFT, the Marine will prepare and perform both team leader and gunner duties during missile loading and unloading of the Avenger. The Avenger will be in the power-up status with the MAIN PWR selector set to SAFE. Assistance from a crew member and the following are available:

- (1) A fully-equipped Avenger.
- (2) One CFT or live missile.
- (3) One serviceable argon bottle.
- (4) TM 9-1425-429-12.

Performance Standards. Unpack and inspect the missile per TM 9-1425-429-12, paragraph 3-8a, and table 3-3 within 30 minutes. Load SVML per procedures outlined in TM 9-1425-433-10, paragraph 3-46, within 7 minutes (in MOPP 4, time extends to 8 minutes). Unload the SVML per TM 9-1425-433-10, paragraph 3-46. Accomplish this task within 6 minutes (in MOPP 4, time extends to 7 minutes).

Prerequisite. SYS-200.

Reference. TM 9-1425-429-12, TM 9-1425-433-10, and Unit SOP.

Ordinance. None.

External Syllabus Support. None.

SYS-202      1.5                                      GUN                                      L

Goal. Install, operate, and maintain the M3P machine gun.

Requirement. Given the reference and during a practical application exercise with the assistance of a crewmember, the Marine will prepare and perform both team leader and gunner duties while the team mount, boresight, load, unload, dismount, and clean the M3P, given the following equipment:

- (1) Avenger weapon system.
- (2) Boresight kit.
- (3) Tool kit.
- (4) 100 rounds of dummy .50 cal. linked ammunition.
- (5) Cleaning material and lubricants.

Performance Standards. While observing all published safety requirements and in accordance with TM 9-1425-433-10, correctly perform the following procedures in the prescribed amount of time:

- (1) Mount (5 min).
- (2) Boresight (18 min).
- (3) Set headspace and timing (5 min).
- (4) Load (9 min).
- (5) Unload (3 min).
- (6) Dismount (5 min).
- (7) Cleaning (no time limit).

Prerequisite. SYS-200.

Reference. TM 9-1425-433-10.

Ordnance. 100 rounds of dummy .50 cal. linked ammunition (minimum 50 rounds).

External Syllabus Support. None.

SYS-203      1.0                                      AVG                                      L

Goal. Emplace the Avenger.

Requirement. During a practical application exercise, the Marine will perform both gunner and team leader duties while emplacing and preparing the Avenger for action. Assistance of a crewmember and a fully equipped Avenger are available. For training purposes, the sectors of fire and PTL will be designated. The Marine will perform either stationary or remote emplacement.

Performance Standards. Emplace and prepare the Avenger for action per procedures outlined in TM 9-1425-433-10, paragraphs 3-29f and 3-38. Accomplish this task within 8 minutes (in MOPP 4, time extends to 10 minutes).

Prerequisite. SYS-200, SYS-201, and SYS-202.

Reference. TM 9-1425-433-10 and Unit SOP.

Ordnance. None.

External Syllabus Support. None.

SYS-204      2.0                                      COMM                                      L

Goal. Install, operate, and maintain the SINCGARS radio.

Requirement. Given the reference, an SL-3 complete SINCGARS radio, ECCM fill device with FH data, KYK-13/TSEC (SC) or AN/CYZ-10 (SC/FH) with keys, and distant Net Control Station, prepare the radio for single channel and frequency hopping operation.

Performance Standards. In accordance with established procedures, prepare the SINCGARS radio for operation and perform a radio check in both single channel and frequency hopping, man-portable and VRC configurations. During a practical application exercise, the gunner will correctly perform troubleshooting and PM procedures.

Prerequisite. None.



Reference. TM 11-5820-890-20-28.

External Syllabus Support. None.

SYS-206      1.0                              COMM/IFF      L/S

Goal. Handle CMS software.

Requirement. Given the reference and in a practical application environment, properly store, use, and destroy CMS materials.

Performance Standards. Individuals will utilize two person integrity, ensure proper transportation, and complete destruction records in accordance with the reference.

Prerequisite. None.

Reference. CMS-21A.

Ordinance. None.

External Syllabus Support. None.

SYS-207      2.0                              GBDL/COMM      L

Goal. Establish a GBDL.

Requirement. Given the reference, a GBDL NCS, an SL-3 complete RTU, and a SINCGARS radio, establish GBDL.

Performance Standards. The gunner will install, operate, and maintain GBDL, successfully receiving target data from a transmitting station.

Prerequisite. SYS-204.

Reference. EADS Software Guide.

Ordinance. None.

External Syllabus Support. None.

SYS-208      1.0                              SPTE              NS

Goal. Operate the Wide Angle Stinger Pointer (AN/PAS-18).

Requirement. Given the references, a FHT/THT or tactical round, and an AN/PAS-18, mount, operate, dismount, and maintain the Wide Angle Stinger Pointer, under conditions of darkness or reduced visibility.

Performance Standards. The gunner will correctly mount and prepare the AN/PAS-18 for operation within 3 minutes. The gunner will dismount the AN/PAS-18 and gripstock from an expended launch tube and remount the AN/PAS-18 and gripstock on a Stinger missile round within a period of 3 minutes.

Prerequisite. None.

Ordinance. FIM-92A/C/D (optional).

External Syllabus Support. None.

SYS-209      1.0      SPTE/AVG/STG/IFF/COMM      S

Goal. Destroy LAAD equipment to prevent enemy use.

Requirement. Given the references, perform simulated emergency destruction on the following equipment:

- (1) COMSEC devices.
- (2) HMMWV.
- (3) Communications hardware.
- (4) Ammunition.
- (5) Missiles.
- (6) Avenger and related subsystems.

Performance Standards. In accordance with established procedures, correctly simulate equipment destruction.

Prerequisite. None.

Reference. MCWP 3-25.10, CMS-21A, and TM 9-1425-433-10.

Ordinance. None.

External Syllabus Support. None.

## 2. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment and operations, in order to effectively execute a tactical mission as a member of a LAAD team.

### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Operations training will be executed as collective training at the appropriate organizational level (TM/SECT/PLT/BTRY/BN) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Ready Stage as depicted in paragraph 310.

### e. Live and Simulator Event Training (5 Events, 15 Hours)

OPS-210      10.0      NAV      L

Goal. Conduct day and night navigation.

Requirement. Given the current GPS, map, compass, and protractor, successfully navigate to designated locations during periods of daylight, darkness, or reduced visibility.

Performance Standards. The Marine must accomplish the following:

- (1) Correctly plot (5) six-digit grid coordinates using a 1:50,000 scale map.
- (2) Find 5 of 5 locations during the day using a map and compass.

- (3) Find 4 of 5 locations during times of darkness or reduced visibility using a map and compass.
- (4) Find 5 of 5 locations during the day using the GPS.
- (5) Find 5 of 5 locations at night using the GPS.

Prerequisite. None.

Reference. MCO P1500.44C and TM 11-5825-291-13.

Ordinance. None.

External Syllabus Support. Appropriate range/training area.

OPS-211

1.0

TRNG

S

Goal. Visually identify aircraft.

Requirement. Without the aid of reference, and given the visual presentation of at least 50 combat aircraft, the Marine will correctly identify the aircraft provided.

Performance Standards. The Marine will successfully identify 100% of U.S. aircraft and 90% of all other (i.e., NATO, Allied, Threat) aircraft presented.

Prerequisite. None.

Reference. FM 44-80.

Ordinance. None.

External Syllabus Support. None.

OPS-212

1.0

COMM

L

Goal. Use proper communications procedures.

Requirement. Given the references, a tactical radio, authentication/encryption sheet, and a tactical field message book, the Marine will establish communications and transmit and receive messages utilizing proper communications procedures.

Performance Standards. The Marine must accurately demonstrate proficiency in the use of:

- (1) Proper radio/telephone procedures.
- (2) Brevity codes.
- (3) Tactical field message book.
- (4) Authentication.
- (5) Message encryption and decryption.
- (6) BEADWINDOW procedures.
- (7) GINGERBREAD procedures.
- (8) MIJI reporting procedures.
- (9) Lost communications procedures.
- (10) Communications jamming countermeasures.

Prerequisite. None.

Reference. ACP-125, MCWP 3-25.10, MCWP 3-25.11, and MCWP 3-40.3B.

Ordinance. None.

External Syllabus Support. None.

OPS-213      1.0                              EMPL                      L/S

Goal. Apply air defense control measures.

Requirement. Given a tactical scenario, or during a practical exercise, define and apply air defense control measures.

Performance Standards. The Marine will correctly define air defense control measures and demonstrate proficiency in their application during field or practical exercises and/or classroom environment. Must demonstrate knowledge of the following:

- (1) Air Defense Warning Conditions (ADWC).
- (2) States of Alert (SOA).
- (3) Rules of Engagement (ROE).
- (4) Weapons Control Status (WCS).
- (5) Identification criteria.
- (6) Self defense criteria.
- (7) Fire control orders.
- (8) Airspace Control Measures (ACM).

Prerequisite. None.

Reference. MCWP 3-25.10 and MCWP 3-25.11.

Ordinance. None.

External Syllabus Support. None.

OPS-214      1.0                              PLNG                      L

Goal. Receive an operations order.

Requirement. During a field or practical exercise, and given a map and appropriate note taking materials, the Marine will receive a five paragraph order, warning order, or frag order issued by the team leader.

Performance Standards. The Marine will accurately recognize and record the pertinent information and requirements of his mission.

Prerequisite. None.

Reference. MCO P1500.44C, MCWP 3-25.10, and MCWP 3-25.11.

Ordinance. None.

External Syllabus Support. None.

### 3. Surface-to-Air Weapons Training (SAW)

a. Purpose. To develop knowledge and proficiency of LAAD engagement techniques against live aircraft and drones.

#### b. General

- (1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Surface-to-Air Weapons training will be executed as collective training at the appropriate organizational level (TM) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Ready Stage as depicted in paragraph 310.

e. Live and Simulator Event Training (4 Events, 13.0 Hours)

SAW-220      5.0              E              STG              S

Goal. Engage aircraft with the Stinger missile system (MANPAD).

Requirement. Given a THT (MTS or field training exercise (FTX)), an STPT, and ROE, engage fixed and rotary wing aircraft. Separate engagements will be conducted against aircraft flying infrared counter measures (IRCM). Engagements will be conducted during times of daylight and darkness or reduced visibility.

Performance Standards. Gunner must properly identify target in accordance with established rules of engagement. Gunner must demonstrate proper detection, acquisition, ranging, super elevation, and firing techniques. Actions are to be evaluated using the MTS. A total of 20 engagements are required. Engagement procedures for cold weather and NBC operations will be utilized in at least four separate engagements.

- (1) FW night engagements.
- (2) RW night engagements.
- (3) FW day engagements.
- (4) RW day engagements.

Prerequisite. None.

Reference. MCWP 3-25.11 and FM 44-1.

Ordinance. None.

External Syllabus Support. MTS.

SAW-221      1.0              E              STG              L

Goal. Fire the Stinger Launch Simulator (STLS).

Requirement. Given a tactical scenario that includes enemy and friendly AOB, ROE, Air Defense Control Measures, and appropriate target, conduct a MANPAD engagement with the STLS. Engagement may be conducted during times of daylight, darkness, or reduced visibility. STLS will be fired on an appropriate range while observing applicable safety constraints and considerations.

Performance Standards. Gunner must properly identify target in accordance with established rules of engagement. Gunner must demonstrate proper detection, acquisition, ranging, super elevation, and firing techniques. Actions are to be evaluated by the firing pit coach.

Prerequisite. SAW-220.

Reference. TM 083199A-12.

Ordnance. VX-99.

External Syllabus Support. Three fixed or rotary wing aircraft or RCMATs, appropriate range space.

SAW-222

5.0

E

AVG

S

Goal. Engage aircraft with the Avenger weapon system.

Requirement. Given an ICOFT and ROE, engage fixed and rotary wing aircraft from a static position and while on-the-move. Separate engagements will be conducted against aircraft flying head-on, crossing, outgoing, and pop-up profiles and employing Infrared Counter Measures (IRCM). Engagements will be conducted during times of daylight and darkness or reduced visibility.

Performance Standards. Gunner must properly identify target in accordance with established rules of engagement. Gunner must demonstrate proper detection, acquisition, ranging, super elevation, manual and auto-track firing techniques. Actions are to be evaluated using the ICOFT. A total of 20 engagements are required. Engagement procedures for cold weather, NBC operations, and shoot on-the-move will be utilized in at least four separate engagements.

- (1) FW night engagements.
- (2) RW night engagements.
- (3) FW day engagements.
- (4) RW day engagements.

Prerequisite. None.

Reference. MCWP 3-25.10A and FM 44-1.

Ordnance. None.

External Syllabus Support. None.

SAW-223

2.0

E

AVG/GUN

S

Goal. Engage aircraft with the M3P Machine Gun.

Requirement. Given an ICOFT and a tactical scenario that includes enemy and friendly air and ground order of battle, ROE, Air Defense Control Measures, and appropriate aerial targets, conduct engagements with the M3P. Gunner will engage fixed and rotary wing aircraft from a static position and while on-the-move. Separate engagements will be conducted against aircraft flying head-on, crossing, outgoing, and pop-up profiles. Engagements will be conducted during times of daylight and darkness or reduced visibility.

Performance Standards. Gunner must demonstrate proper detection, ranging, and firing techniques using the manual and automatic tracking modes from the turret. Actions are to be evaluated using the ICOFT. A total of 20 engagements are required. Engagement procedures for cold weather, NBC operations, and shoot on-the-move will be utilized in at least four separate engagements.

- (1) FW night engagements.

- (2) RW night engagements.
- (3) FW day engagements.
- (4) RW day engagements.

Prerequisite. None.

Reference. MCWP 3-25.10A and FM 44-1.

Ordinance. None.

External Syllabus Support. None.

#### 4. Qualification Training (QUAL)

a. Purpose. To qualify as a Combat Ready LAAD Gunner.

b. General

(1) Administrative Notes. Performance evaluation to qualify for LAAD designations will be conducted per Chapter 6, T&R Manual, Administrative, and the standardized evaluation forms located in the appendix to this syllabus. Upon successful completion of a qualification event, the crewmember should be designated by the unit commanding officer and have a letter placed in their MACCS Performance Record stating their qualification.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Qualification training will be executed as collective training at the appropriate organizational level (TM/SECT/PLT/BTRY) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Ready Stage as depicted in paragraph 310.

e. Live and Simulator Event Training (1 Event, 2 Hours)

QUAL-230      2.0              E

Goal. Qualify as a Combat Ready LAAD Gunner/Driver.

Requirement. As a member of a LAAD team, given an informal or formal Marine Corps Combat Readiness Evaluation (MCCRE), qualify as a LAAD Gunner/Driver.

Performance Standards. The Marine must pass the MCCRE and qualify as a LAAD Gunner/Driver per the standards listed in MCO 3501.9 series.

Prerequisite. Completion of all 200-level events.

Ordinance. None.

External Syllabus Support. None.

#### 334. COMBAT QUALIFICATION TRAINING

##### 1. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment.

b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Operations training will be executed as collective training at the appropriate organizational level (TM/SECT/PLT/BTRY/BN) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualification Stage as depicted in paragraph 310.

e. Live and Simulator Event Training (5 Events, 8.5 Hours)

OPS-300

1.0

PLNG

L

Goal. Receive an operations order.

Requirement. During a field or practical exercise, and given a map and appropriate note taking materials, the team leader will receive a five paragraph order, warning order, or frag order issued by the Section Leader.

Performance Standards. The Marine will accurately recognize and record the pertinent information and requirements of his mission.

Prerequisite. None.

Reference. MCO P1500.44C, MCWP 3-25.10, and MCRP 3-25.10A.

Ordinance. None.

External Syllabus Support. None.

OPS-301

4.0

PLNG

L

Goal. Conduct LAAD team employment planning.

Requirement. Given a tactical scenario, the team leader will accurately identify LAAD team planning considerations and apply them during field exercise and/or classroom environment (2 hours).

Performance Standards. The team leader will identify the planning considerations for the following missions:

- (1) Defense of a static position.
- (2) Defense of a maneuver element.
- (3) Defense of a convoy.

Prerequisite. OPS-300.

Reference. MCWP 3-25.10 and MCRP 3-25.10A.

Ordinance. None.

External Syllabus Support. None.





Performance Standards. Given a map, the team will draw a Cartesian coordinate reference system on a tactical map overlay. The team will properly convert cueing information to a map location and properly orient to engage threat 10 times.

Prerequisite. None.

Reference. MCWP 3-25.10 and MCWP 3-22.

Ordinance. None.

External Syllabus Support. None.

## 2. Surface-to-Air Weapons Training (SAW)

a. Purpose. For LAAD teams to develop knowledge and proficiency of LAAD engagement techniques against live aircraft and drones.

### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Surface-to-air weapons training will be executed as collective training at the appropriate organizational level (TM) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualification Stage as depicted in paragraph 310.

### e. Live and Simulator Event Training (4 Events, 4.5 Hours)

SAW-310

1.0

E

STG

S

Goal. Conduct multiple target engagements with the Stinger missile system (MANPAD).

Requirement. Utilizing team coordination, and given a tactical scenario that includes enemy and friendly air AOB, ROE, and air defense control measures, engage multiple fixed and rotary wing aircraft in the MTS. Targets will fly mixed profiles and employ IRCM. Engagements will be conducted during times of daylight and darkness or reduced visibility.

Performance Standards. Team will demonstrate proper crew coordination under the control of the team leader. Team leader will demonstrate proper target selection and fire distribution techniques. Gunners must properly identify target in accordance with established rules of engagement. Gunners must demonstrate proper detection, acquisition, ranging, superelevation, and firing techniques in accordance with firing doctrine guidance. Actions are to be evaluated using the MTS. A total of 10 multiple-target scenarios are required. Engagement procedures for cold weather and NBC operations will be utilized in at least two scenarios.

Prerequisite. None.

Reference. MCRP 3-25.10A and TM 9-1425-433-10.

Ordnance. None.

External Syllabus Support. MTS.

SAW-311      1.0              E              AVG              S

Goal. Conduct multiple target engagements with the Avenger weapon system.

Requirement. Utilizing team coordination, and given a tactical scenario that includes enemy and friendly air AOB, ROE, and air defense control measures, engage multiple fixed and rotary wing aircraft in the ICOFT. Targets will fly mixed profiles and employ IRCM. Engagements will be conducted during times of daylight and darkness or reduced visibility.

Performance Standards. Team will demonstrate proper crew coordination under the control of the team leader. Team leader will demonstrate proper target selection and fire distribution techniques. Gunners must properly identify target in accordance with established rules of engagement. Gunners must demonstrate proper detection, acquisition, ranging, and firing techniques in accordance with firing doctrine guidance. Actions are to be evaluated using the ICOFT. A total of 10 multiple target scenarios are required. Engagement procedures for cold weather and NBC operations will be utilized in at least two scenarios.

Prerequisite. None.

Reference. MCRP 3-25.10A and TM 9-1425-433-10.

Ordnance. None.

External Syllabus Support. ICOFT.

SAW-312      1.0              E              STG/AVG              L

Goal. Engage an aerial target with a Stinger missile (MANPAD or Avenger).

Requirement. During a live firing exercise, the gunner, given a Stinger missile (MANPAD or Avenger), will engage an aerial target. Avenger engagements will be conducted from either the turret or RCU. Engagement may be conducted during times of daylight, darkness, or reduced visibility. Missiles will be fired on an appropriate range observing applicable safety constraints and considerations.

Performance Standards. Team will demonstrate proper crew coordination under the control of the team leader. Team leader will demonstrate proper target selection and fire distribution techniques. Gunner must demonstrate proper detection, acquisition, ranging, superelevation, and firing techniques in accordance with firing doctrine guidance.

Prerequisite. SAW-220 or SAW-222.

Reference. FM 44-18-1 and TM 9-1425-429-12.

Ordnance. Stinger Missile.

External Syllabus Support. Appropriate aerial target and associated support requirements.

SAW-313      1.5              E              AVG/GUN      L

Goal. Engage aerial targets with the M3P.

Requirement. Given an Avenger loaded with 285 rounds of .50 caliber ammunition and a tactical scenario that includes enemy and friendly air and ground order of battle, ROE, air defense control measures, and appropriate aerial targets, conduct engagements with the M3P. Engagement may be conducted during times of daylight, darkness, or reduced visibility.

Performance Standards. Team will demonstrate proper crew coordination under the control of the team leader. Team leader will demonstrate proper target selection and fire distribution techniques. Gunner must demonstrate proper detection, ranging, and firing techniques using the manual and automatic tracking modes from both the turret and RCU.

Prerequisite. SAW-222

Reference. MCRP 3-25.10A and TM 9-1425-433-10.

Ordnance. Ammunition, .50 cal, linked 4-and-1 (DODIC A576).

External Syllabus Support. Aerial and surface target, appropriate range space, and scoring system (if available).

#### 4. Qualification Training (QUAL)

a. Purpose. To qualify as a Combat Qualified LAAD team leader and LAAD team.

##### b. General

(1) Administrative Notes. Performance evaluation to qualify for LAAD designations will be conducted per Chapter 6, T&R Manual, Administrative, and the standardized evaluation forms located in the appendix to this syllabus. Upon successful completion of a qualification event, the crewmember should be designated by the unit commanding officer and have a letter placed in their MACCS Performance Record stating their qualification.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Qualification training will be executed as collective training at the appropriate organizational level (TM/SECT/PLT/BTRY) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Combat Qualified Stage as depicted in paragraph 310.

##### e. Live and Simulator Event Training (2 Events, 96.0 Hours)

QUAL-320      48.0              E

Goal. Qualify as a Combat Qualified LAAD Team Leader.

Requirement. As a member of a LAAD team, given an informal or formal MCCRE, qualify as a LAAD Team Leader.

Performance Standards. The Marine must pass the MCCRE and qualify as a LAAD Team Leader per the standards listed in MCO 3501.9 series.

Prerequisite. QUAL-200 and completion of all 300-level events.

Ordinance. None.

External Syllabus Support. None.

QUAL-321      48.0              E

Goal. Qualify as a LAAD team.

Requirement. Given a formal or informal MCCRE, qualify as a Combat Qualified LAAD Avenger or MANPAD team.

Performance Standards. The team must pass the MCCRE and qualify as a LAAD Team per the standards listed in MCO 3501.9 series.

Prerequisite. QUAL-300.

Ordinance. None.

External Syllabus Support. None.

### 335. FULL COMBAT QUALIFICATION TRAINING

#### 1. Systems Training (SYS)

a. Purpose. To develop requisite skills and working knowledge relating to the characteristics, capabilities, limitations, and operation of LAAD related systems or equipment which LAAD Team Leaders may be required to operate and maintain.

#### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Systems training will be executed as collective training at the appropriate organizational level (team/section) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Full Combat Qualification Stage as depicted in paragraph 310.

#### e. Live and Simulator Event Training (1 Event, 1.5 Hours)

SYS-400      1.5                      SPTE              L

Goal. Install, operate, and maintain the AN/UPS-3 Tactical Defense Alert Radar (TDAR).

Requirement. Given the reference, an SL-3 complete TDAR, external power source, and with the aid of a crewmember, properly assemble, operate and perform preventive maintenance on the TDAR in accordance with established procedures.

Performance Standards. TDAR will be properly assembled IAW the reference and placed into operation.

Prerequisite. None.

Reference. TM 09480A-12&P/1.

Ordinance. None.

External Syllabus Support. None.

## 2. Operations Training (OPS)

a. Purpose. To develop proficiency with LAAD employment and operations, in order to effectively execute a tactical mission as a member of a LAAD Team.

### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Operations training will be executed as collective training at the appropriate organizational level (TM/SECT/PLT/BTRY/BN) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Full Combat Qualification Stage as depicted in paragraph 310.

### e. Live and Simulator Event Training (2 Events, 49.0 Hours)

OPS-410

1.0

PLNG

L/S

Goal. Plan for the employment of small arms in an air defense role.

Requirement. Given a threat scenario, plan and brief the supported unit in the employment of small arms in an air defense role.

Performance Standards. The team leader will plan and brief the small arms air defense plan ensuring the following elements are included:

- (1) Techniques of leading fixed wing aircraft.
- (2) Techniques of leading rotary wing aircraft.
- (3) Volume of fire and weapons mix.

Prerequisite. None.

Reference. MCWP 3-25.10 and MCRP 3-25.10A.

Ordinance. None.

External Syllabus Support. None.

OPS-411      48.0                      EMPL                      L/S

Goal. Conduct shipboard Stinger team operations.

Requirement. While embarked aboard amphibious shipping.

Performance Standards. The Marine will:

- (1) Assist in planning for Defense of the Amphibious Task Force (DATF) operations to include the following considerations:
  - (a) State command and control requirements (personnel, equipment, communications, facilities and procedures).
  - (b) State the location of the LAAD Commander.
  - (c) State who has engagement authority.
  - (d) Demonstrate proper safety procedures.
  - (e) State the capabilities and limitations of the Stinger Missile System.
  - (f) Participate in embarkation and debarkation.
  - (g) Participate in littoral operations.

Prerequisite. OPS-301.

Reference. MCO P1500.44C, MCWP 3-25.10, MCRP 3-25.10A, MCDP 6, and Ship's Battle Plan.

Ordnance. None.

External Syllabus Support. None.

### 3. Surface-to-Air Weapons Training (SAW)

a. Purpose. To develop knowledge and proficiency of LAAD engagement techniques against live aircraft and drones.

#### b. General

(1) Administrative Notes. None.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Surface-to-Air Weapons training will be executed as collective training at the appropriate organizational level (TM) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Full Combat Qualification Stage as depicted in paragraph 310.

#### e. Live and Simulator Event Training (1 Event, 1.0 Hour)

SAW-420      1.0                      E                      STNG                      L

Goal. Conduct shipboard firing of the Stinger Launch Simulator.

Requirement. While embarked aboard an amphibious ship, and given a tactical scenario that includes enemy and friendly AOB, ROE,

air defense control measures, and an appropriate target, conduct a MANPAD engagement with the STLS. Engagement may be conducted during times of daylight, darkness, or reduced visibility. STLS will be fired from an approved location, observing applicable safety constraints and considerations.

Performance Standards. Gunner must demonstrate proper detection, acquisition, ranging, super elevation, and firing techniques.

Prerequisite. None.

Reference. TM 083199A-12.

Ordinance. VX-99.

External Syllabus Support. Fixed or rotary wing aircraft, or aerial target; appropriate range space.

#### 4. Qualification Training (QUAL)

a. Purpose. To qualify as a Full Combat Qualified LAAD team leader.

b. General

(1) Administrative Notes. Performance evaluation to qualify for LAAD designations will be conducted per Chapter 6, T&R Manual, Administrative, and the standardized evaluation forms located in the appendix to this syllabus. Upon successful completion of a qualification event, the crewmember should be designated by the unit commanding officer and have a letter placed in their MACCS Performance Record stating their qualification.

(2) Prerequisite. Marines will have completed the previous stage of training and have achieved appropriate qualifications and designations per paragraph 306.

c. Crew Requirements. Qualification training will be executed as collective training at the appropriate organizational level (TM/SECT/PLT/BTRY) as dictated by the conditions listed for each event.

d. Academic Training. Appropriate academic training and lectures for the Full Combat Qualified Stage as depicted in paragraph 310.

e. Live and Simulator Event Training (1 Event, 2.0 Hours)

QUAL-430      2.0              E

Goal. Qualify as a Full Combat Qualified LAAD Team Leader.

Requirement. As a member of a LAAD team, given an informal or formal MCCRE, qualify as a Full Combat Qualified LAAD Team Leader.

Performance Standards. The Marine must pass the MCCRE and qualify as a LAAD Team Leader per the standards listed in MCO 3501.9 series.

Prerequisite. QUAL-300 and completion of all 400-level events.

Ordinance. None.

External Syllabus Support. None.



340. SPECIAL TRAINING REQUIREMENTS. None.

360. EXPENDABLE ORDNANCE AND EXTERNAL SUPPORT REQUIREMENTS

Table 3-7.--Expendable Ordnance Requirements.

ORDNANCE	100 LEVEL	200 LEVEL	300 LEVEL	400 LEVEL
Dummy .50 cal linked ammunition	100 rds**	100 rds**		
Stinger missile	1**		1***	
Gripstock*	1**		1***	
A576 .50 caliber	100 rds**		285 rds	
VX99 STLS		1		1

\* Gripstocks can be re-used until failure.

\*\* Denotes a one time training event.

\*\*\* One Missile is required per Gunner every three years.

1. Ordnance Related External Support Requirements. Per the above table, each 7212 LAAD Gunner is required to fire one Stinger missile every three years and 285 rounds of .50 caliber (M3P) annually. While ordnance requirements can be specified per the individual, the associated aerial targets and contractor support funding is determined at the unit level. Current aerial target systems require significant contractor support during the live-fire exercise.

370. PROFICIENCY INTERVALS. Table 3-8, 3-9, and 3-10 contain the proficiency intervals for the Combat Readiness, Combat Qualification, and Full Combat Qualification training levels.

Table 3-8.--LAAD Gunner Proficiency Interval for the Combat Readiness Training Level.

EVENT	CODE	HOURS	PROFICIENCY INTERVAL	CRP	T	C	R	E	CONDITIONS & REMARKS
SYS	200	1	12	0.5					L
	201	1	12	0.5					L
	202	1.5	12	0.5					L
	203	1	12	0.5					L
	204	2	12	0.5					L
	206	1	12	0.5					L/S
	207	2	12	0.5					L
	208	1	12	0.5					N/S
	209	1	12	0.5					S
OPS	210	10	12	1.0					L
	211	1	12	1.0					S/L
	212	1	12	1.0					L
	213	1	12	1.0					L/S
	214	1	12	1.0					L
SAW	220	5	12	.75				X	S
	221	1	12	0.25				X	L
	222	5	12	1.0				X	S
	223	2	12	.75				X	S
QUAL	230	2	12	2.75				X	

Table 3-9.--LAAD Gunner Proficiency Interval for the Combat Qualification Training Level.

EVENT	CODE	HOURS	PROFICIENCY INTERVAL	CRP	T	C	R	E	CONDITIONS & REMARKS
OPS	300	1	12	1.25					L
	301	4	12	1.25					L
	302	1	12	0.5					L
	303	1.5	12	2.0					L
	304	1	12	1.25					L
SAW	310	1	12	1.25				X	S
	311	1	12	1.25				X	S
	312	1	36	1.25				X	L
	313	1.5	12	1.25				X	L
QUAL	320	48	18	3.75				X	
	321	48	18	5				X	

Table 3-10.--LAAD Gunner Proficiency Interval for the Full Combat Qualification Training Level.

EVENT	CODE	HOURS	PROFICIENCY INTERVAL	CRP	T	C	R	E	CONDITIONS & REMARKS
SYS	400	1.5	24	0.5					L
OPS	410	1	24	0.5					L/S
	411	48	N/A	1					L/S
SAW	420	1	24	0.5				X	L
QUAL	430	48	24	2.5				X	

380. EVENT UPDATE CHAINING. Table 3-11 contains the event update chaining for the LAAD Gunner.

Table 3-11.--LAAD Gunner Training Event Update Chaining.

EVENTS	EVENTS UPDATED
200	
201	
202	
203	200, 201, 202
204	
206	
207	204
208	
209	
210	
211	
212	204
213	
214	213
220	
221	
222	
223	
230	200, 201, 202, 203, 204, 206, 207, 209, 210, 211, 212, 213, 214
300	214
301	300
302	AVENGER - 200, 201, 202
303	AVENGER - 200, 201, 202, 203, 204
304	
310	220
311	222
312	
313	
320	204, 206, 207, 208, 209, 210, 211, 212, 213, 214, 300, 301, 302, 303, 304
321	320
400	
410	
411	
420	221
430	320